
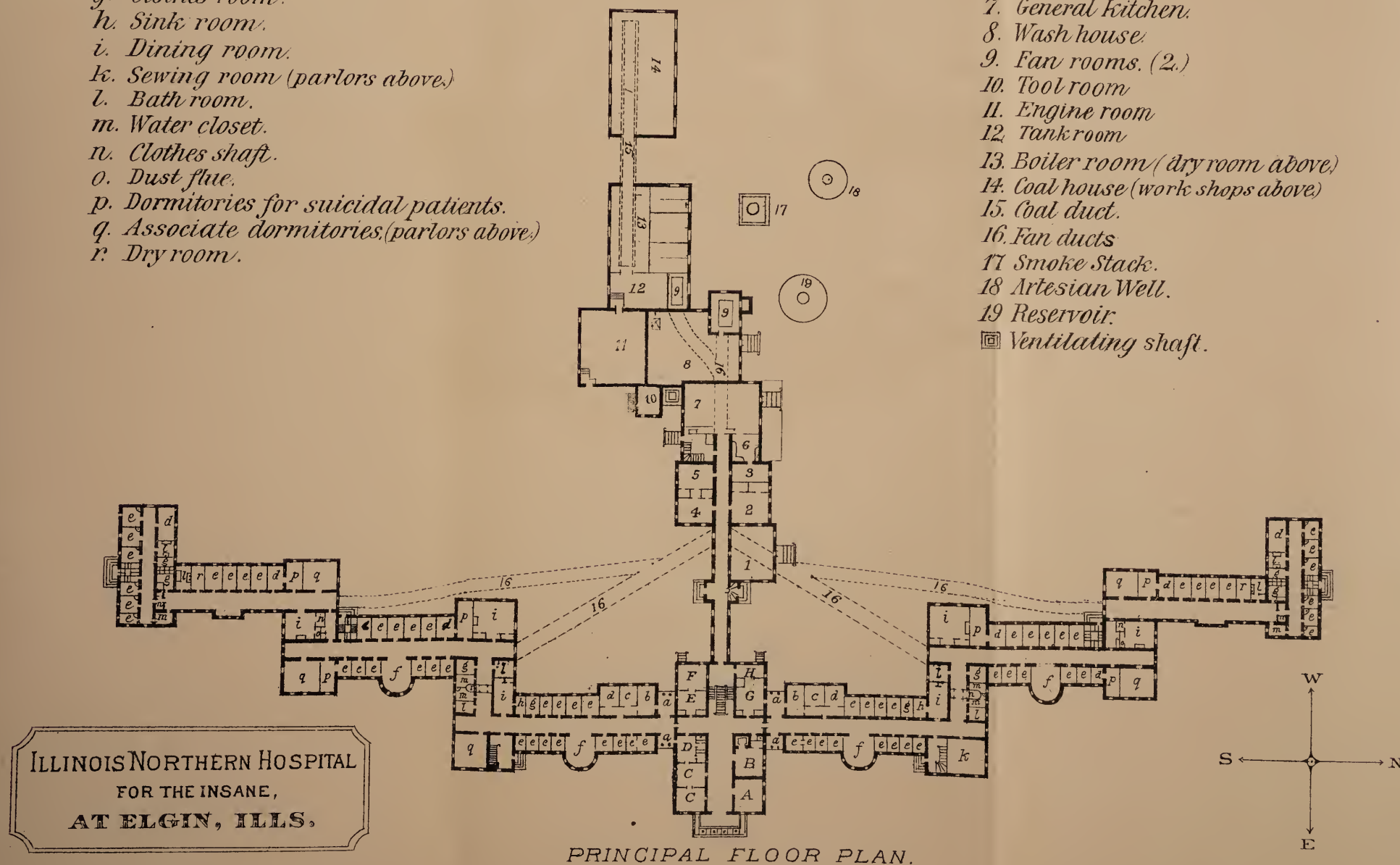


ILLINOIS NORTHERN HOSPITAL FOR THE INSANE.

REFERENCES TO THE GROUND PLAN.

- A. Reception room.*
B. Clerks office.
C. Medical offices.
D. Dispensary.
E. Store room.
F. Matrons room.
G. Officers dining room.
H. Officers kitchen.
- a. Conservatories.*
b. Parlors for visitors to patients.
c. Infirmary room.
d. Attendants room.
e. Single dormitories.
f. Alcove.
g. Clothes room.
h. Sink room.
i. Dining room.
k. Sewing room (parlors above.)
l. Bath room.
m. Water closet.
n. Clothes shaft.
o. Dust flue.
p. Dormitories for suicidal patients.
q. Associate dormitories (parlors above.)
r. Dry room.

- 1. Ironing room (sorting and mending above.)*
2. Meat room.
3. Store room.
4. Sitting room (employees)
5. Dining room (employees) (Bakery below)
6. Scullery.
7. General Kitchen.
8. Wash house.
9. Fan rooms. (2.)
10. Tool room
11. Engine room
12. Tank room
13. Boiler room (dry room above.)
14. Coal house (work shops above.)
15. Coal duct.
16. Fan ducts
17. Smoke Stack.
18. Artesian Well.
19. Reservoir.
 *Ventilating shaft.*



SEVENTH BIENNIAL REPORT

OF THE

TRUSTEES, SUPERINTENDENT AND TREASURER

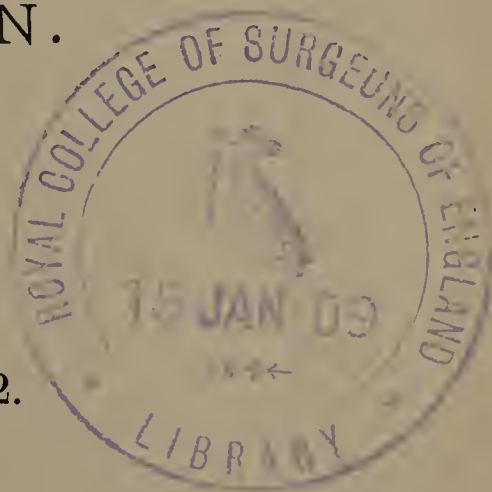
OF THE

ILLINOIS

NORTHERN HOSPITAL FOR THE INSANE,

AT ELGIN.

OCTOBER 1, 1882.



SPRINGFIELD, ILL.:
H. W. ROKKER, STATE PRINTER AND BINDER.
1883.

OFFICERS OF THE HOSPITAL.

BOARD OF TRUSTEES.

President,

C. W. MARSH.

Trustees,

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I. C. BOSWORTH, Elgin.

FREDERICK STAHL, Galena.

Secretary,

R. W. PADELFORD, Elgin.

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Assistant Physicians,

WILLIAM G. STONE, M. D.,

ALLEN FITCH, M. D.

Clerk,

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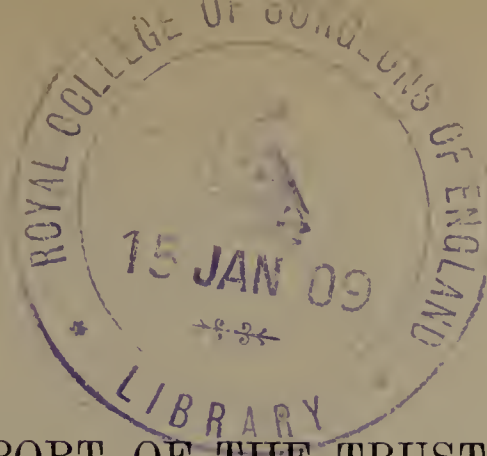
Matron,

MRS. F. M. PORTER.

Supervisors,

EDWARD WELLINGHOFF,

MISS MOLLY N. BRUNK.



REPORT OF THE TRUSTEES.

HON. SHELBY M. CULLOM, *Governor of Illinois.*

SIR:—The trustees of the Illinois Northern Hospital for the Insane herewith respectfully present their seventh biennial report, for the two years ending September 30, 1882, to which are appended the reports of the superintendent and treasurer.

The statistical tables found in the superintendent's report are a condensed statement showing the movement of population and other interesting facts connected with the history of this period. These tables make a favorable showing as compared with the last report submitted by this board, though the percentage of recoveries on the number admitted is less than previously reported. This is owing to the practice which has grown up of late in Cook county of sending her recent and curable cases, alike with the chronic ones, to the county insane hospital at Jefferson; whereas, were the cases immediately removed to Elgin, as in former years, the percentage of recoveries would have been greater, because most of the cures are effected in the early stages of the disease.

It will be noted that the number of discharges is greater, and the rate of mortality sensibly lower than during the period covered by the preceding report.

Although there was considerable sickness among patients during the fall and winter of 1880 and 1881, the general health of the house has been excellent, and the comfort of the inmates has been materially increased by the measures taken to that end by the officers of the institution.

As appears upon page ten of the fifth biennial report and upon page seven of the sixth biennial report of this board, the property constituting the Burr bequest was stated as follows:

The lot (estimated value).....	15,000 00
Water bonds (par value, \$10,000.).....	10,250 00
Due from Mr. Bryan.....	9,000 00
Due from S. S. and D. B. Gardner.....	1,660 00
Total.....	\$35,910 00

Of these amounts, at least one, and perhaps part of another, should be considered, in the present dealing with the fund, as income, and not principal.

The item of sixteen hundred and sixty dollars was income, that is, rent accrued and due and unpaid, as Mr. Bryan had not collected it when the lot and lease were transferred by him to this board. The other item referred to, is two thousand and fifty dol-

lars of the water bond item of ten thousand two hundred and fifty dollars, consisting of the two bonds and the premium on them, used to defray part of the expense in securing the fund to this board, the entire fund having been claimed by another board.

With these items omitted from the principal of the fund, the statement would be :

The lot (estimated value)	15,000 00
Water bonds (with premium).....	8,200 00
Due from Mr. Bryan.....	9,000 00

Total principal.....	\$32,200 00
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Income due from S. S. & D. B. Gardner.....	1,660 00
Bonds used to secure the fund in part.....	2,050 00

Total.....	\$35,910 00
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On October 1, 1880, there had been paid by Mr. Bryan, on account of the nine thousand dollars principal, the sum of five hundred dollars, (which was paid in cash, and the Reichel notes, since then paid in cash). Mr. Bryan has since paid one thousand dollars of the principal, leaving seven thousand five hundred dollars as the amount of principal still unpaid, the same becoming due August 1, 1883.

On October 1, 1880, there was still due and unpaid two hundred and sixty dollars, being part of the sixteen hundred and sixty dollars due from S. S. & D. B. Gardner. This has since been paid, so that of the original amounts, there still remain the following :

The lot (estimated value).....	15,000 00
Water bonds (with premium).....	8,200 00
Due from Mr. Bryan, (principal).....	7,500 00

Total.....	\$30,700 00
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The fifteen hundred dollars paid in by Mr. Bryan, on account of principal, has been loaned to Mr. E. L. Bishop on his individual note, properly secured.

It is deemed advisable by this board, in making future statements of the Burr fund, to calculate the water bonds at their par value, and not to include the premium as has heretofore been the custom.

The assets of the fund, October 1, 1882, would then be as follows :

The lot, (original estimate).....	15,000 00
Water-bonds, (without premium).....	8,000 00
Balance of Mr. Bryan's obligation.....	7,500 00
Secured note of E. L. Bishop....	1,500 00

Total principal.....	\$32,000 00
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On October 1, 1882, there was due and unpaid the interest due August 1, 1882, from Mr. Bryan, being one year's interest at eight per cent., on seven thousand five hundred dollars.....	600 00
There was also accrued, but not due, the interest on the same seven thousand five hundred dollars, from August 1, 1882, to October 1, 1882, being for two months.....	100 10
There was also due October 1, 1882, from S. S. & D. B. Gardner, rent and interest to that date.....	1,404 04

Total income due.....\$2,104 04

As will appear from his report, our treasurer has received five thousand five hundred and fifty-eight dollars and fifty cents from the following sources:

On Account of Principal.

Paid by T. B. Bryan.....1,370 00

Income Account.

Paid by S. S. & D. B. Gardner.....	2,248 50
Paid by T. B. Bryan.....	610 00
Paid by E. L. Bishop.....	90 00
Interest on water-bonds.....	1,240 00

Total income received.....	\$4,188 50
Add balance on hand as given in last report.....	1,413 58

Total income to be accounted for.....	\$5,602 08
From this amount there has been expended to October 1, 1882, for magic lantern, billiard-table, repairs, etc.....	384 25

Leaving balance in treasurer's hands.....\$5,217 83

While the condition of the building and its appointments is generally good, we respectfully call attention to grave defects existing in the system of heating, which have hitherto baffled all attempts to remedy them. As stated in the superintendent's report, "immediate necessities have been bridged over" by temporary expedients, but the difficulties can only be overcome by radical changes in the system itself. The system at present in use is that known as "high pressure," to which is largely chargeable the great consumption of fuel, which has marked the working of the heating apparatus since its introduction into the institution.

The defects of this system, as appears by the statement of the expert, whose report is appended to that of the superintendent, are fundamental in their nature. Without entering into a discussion of the relative merits of different methods of heating, we may say that the defects of "high pressure" have become so apparent that in a number of similar institutions it has given way to the "low pressure system," which is found to be much better adapted to the heating of large buildings.

In the attempt to remedy the defects of "high pressure," now in use, a great variety of expedients have been resorted to, of which a brief *résumé* will not be out of place.

In the winter of 1880 and 1881, the matter was thoroughly investigated by the visiting committee of the legislature, and the utter failure of the apparatus to do the work required was fully demonstrated. As the result of that investigation, a bill was introduced and passed in the last general assembly, appropriating thirty thousand nine hundred and eighty-five dollars, to be applied to the removal of obstacles which stood in the way of an equal diffusion of heat through all parts of the building, at a minimum of cost. Under this appropriation, the following improvements were introduced in the direction of securing the desired result:

Four new boilers.....	\$10,000 00
A new smoke-stack.....	3,500 00
Drop-flues.....	800 00
Heater and purifier.....	1,100 00
Adding to power of engine, new shafting, etc.....	2,500 00
New fan.....	1,250 00
Sewer ventilation.....	500 00
Cast-iron radiators.....	4,000 00
New engine and pump-house.....	4,450 00

These changes were made on the reports of two experts, who, before making their recommendations, submitted the building and the apparatus to a critical examination. But these changes did not touch the vital point. We believe, however, that they are made in the right direction, and that by supplementing what has already been done by further action looking toward the same end, the building will not only be properly heated throughout, but the saving effected in consumption of fuel and in the lessened strain on machinery will more than compensate for the expense incurred in carrying out the proposed improvement. The estimated cost of changes yet to be made in order to perfect the system and secure all its advantages, is as follows:

For radiation for south wing and central building, including globe and automatic air-valves, expansion-joints, etc.....	7,897 70
For pipe, fittings, labor, etc.....	7,677 55
For radiator-boxes and other carpenter work.....	1,059 50
For altering heating and ventilating flues, together with necessary mason-work to complete air-ducts and ventilating-shafts.....	2,247 02
Total.....	<u>\$18,881 77</u>

For two new boilers, sixty inches by sixteen feet, with fire fronts, setting and connections.....	\$4,340 00
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This estimate covers necessary improvements in the central building and south wing, in regard to which instant action is imperatively demanded, in order to prevent actual suffering among the patients from the impairment and even possible destruction of the heating apparatus in those parts of the institution. The superintendent, in his report, shows the pressing necessity for immediate action in the localities named. On this subject he says: "The coils and

return-pipes under the south wing and central building are giving us a great deal of trouble; the threads upon them have become so weakened by rust, that they cannot resist the pressure put upon them, and the bursting of some one or more of the pipes is an almost daily occurrence."

An estimate in detail of the cost of alterations recommended, will be found in the report submitted by the Walworth Manufacturing Company, appended to this report.

The sum required for the execution of these needed reforms may seem unduly large, but a consideration of the facts will demonstrate that what appears to be a possible extravagance is in fact a measure of the strictest economy. The strain on the machinery working under the high pressure system is largely overcome, thus diminishing the expenses of repairs, which at present, amount in themselves to a considerable sum; an equable distribution of heat throughout the building is at the absolute command of the engineer, and the saving in fuel alone, on an estimate considerably lower than that of the expert whose report is appended, is not less than four thousand dollars per annum; or in other words, a saving, in about five years, in this one particular, of the whole additional cost of the improvements.

In view of the facts above enumerated and the benefits which will undoubtedly result from the proposed change, can the state afford to waste its funds in perpetuating the system which is completely demonstrated to be a failure, when it has within its grasp the means of absolute relief? We would therefore earnestly recommend that the legislature make the appropriation called for by the estimate.

The board deem it proper to state, that the large consumption of coal last year was due to a combination of causes incident to the removal of the old boilers, and the re-setting of those which replaced them. During the progress of this work, in order to warm the building, it was found necessary to set two of the old boilers in the open air, which necessitated the use of a much larger quantity of fuel than would have been required, had it been possible to have properly housed them while the transfer was being made. In addition to this, the excessive incrustation of the boilers seriously impaired their efficiency in the production of heat, and required the use of much more than the ordinary quantity of fuel to generate the steam necessary to properly heat the building. A still further draft was made upon the fuel in carrying out the operations attendant upon the boring of the artesian well.

A new Worthington duplex fire-pump has been purchased and set up, from the fund appropriated for that purpose. Considering the possible dangers from fire, the importance of this measure, in the protection of the property of the state, is apparent at a glance.

As contemplated in the act of appropriation, five thousand dollars have been expended in the boring of the artesian well, which is two thousand and sixty-three feet in depth. Of this, twelve hundred feet are tubed with three-inch galvanized iron pipe of approved quality and weight, and gratifying results have been achieved, as will be apparent from the inspection of the superintendent's report and the analysis of the water, which will be found in the appendix to this report.

While the present supply seems, in quality and quantity, to meet the demands of the institution in this direction, we are of opinion, considering the probable growth of the hospital, that a four-inch bore would have been preferable; but it was not ascertained, until after the appropriation was made, and when the bids were received, that the sum appropriated would not cover the expense of putting down a four-inch pipe.

When the proper pumping facilities are obtained, we hope to dispense entirely with the hospital water-works now located at the river.

The appropriation for a new ice-house remains unexpended, owing to the fact that immediately after the appropriation was made the price of building materials advanced to a point which rendered it impossible to construct the building inside of the amount allowed.

The work of embellishing the grounds connected with the hospital has been pushed forward in a gratifying manner and at a small expense, owing to the utilization of the labor of the patients, large numbers of whom have daily been employed.

In addition to the matters above named, a number of minor improvements have been made which have materially added to the attractiveness and usefulness of the hospital. The details of these improvements will be found in the report of the superintendent.

In order to carry on the work of improvement of the grounds, we would respectfully ask the usual annual allowance of one thousand dollars.

The board are impressed with the necessity of having an abundant supply of water for use in case of fire—such an amount as can not well be stored in cisterns. This can only be obtained in the way proposed—that is, by a small artificial lake or reservoir, to receive the surplus water of the artesian well, by piping from the water-head below the ground-surface to the pond; or if that prove insufficient, by taking from the main pipe laid from the river to the building, the taps for that purpose being already in place. Besides its usefulness, it will be an ornament to the grounds. We deem it our duty to urge the importance of this measure, and desire to keep ourselves continually on record as asking for it. A plan for the proposed reservoir has been secured, and an estimate made of the cost of its construction, which will amount to about five thousand dollars. This sum, we respectfully ask, may be appropriated for that purpose.

In view of the fact that the state refuses to insure the hospital buildings, and the additional fact, that not more than eighty thousand gallons of water are in store at the institution at any one time, we do not feel called upon to assume the responsibility of neglecting to urge upon the legislature, as we have frequently done heretofore, the necessity of making a provision of this nature. Further delay in this matter would be little short of criminality. The plan and estimate of cost above referred to, will be found elsewhere in this report.

The attention of the legislature has been repeatedly called to the dilapidated condition of the old fence in front of the hospital grounds, and the great desirability of the erection of a new fence. Its ruinous condition sadly mars the beauty of the grounds, and we deem it our duty to ask an appropriation of three thousand dollars for the

purpose of redeeming the otherwise attractive landscape from this blot upon its face. There are required two hundred and thirty rods of fence, which should have two suitable gate-ways. The required estimate of cost will be found in the appendix.

Incidental mention has been made, in the estimate for heating apparatus, to two new steel boilers. We wish to call special attention to this matter, for the reason that the old boilers, in temporary use, are totally unfit to serve us any longer. They have been so often patched, that the original boilers are only visible in spots. Their interiors are thoroughly covered with incrustations, which cannot be removed; and aside from their weakness and consequent danger incurred by their use, they are almost worthless for the purpose for which they were constructed. They have been examined by Chicago boiler-makers, whose decision was, that they were not worth the expense of repair. It is of the utmost importance to the success of our whole heating-apparatus that they should be replaced at once by new boilers.

We cordially second the suggestion of the superintendent, that a further increase be made in the number of volumes in the hospital library, many of the books having been injured and a number destroyed by constant use.

In regard to the desirability of furnishing the hospital with needed electrical and pathological apparatus for medical and scientific uses. we call special attention to the report of the superintendent on that subject. The necessity of such apparatus is so fully recognized by the medical profession, that, in order to keep pace with the rapid advance of medical science in the treatment of disease, such an equipment is indispensable.

There is an urgent demand for greater facilities in our laundry work. The washing-machines now in operation are not only too small for the work to be done, but they are practically worn out. The mangle has outlived its days of usefulness, and should be immediately replaced by one of more modern construction, and better adapted to the accomplishment of the work required of it. An elevator should be put in for the purpose of hoisting the wet clothing from the wash-room to the dry-room, that labor being too heavy for the women, upon whom it now falls. The estimated cost of the above machinery is two thousand two hundred dollars.

The last general assembly appropriated, for current expenses, for the maintenance of five hundred and twenty-five patients, the sum of one hundred thousand dollars *per annum*. Of this amount. there is a balance on hand of six hundred and eighty-five dollars and twenty-one cents.

This result has been reached only by the exercise of the strictest economy. For the year following the date of the appropriation, the prices of supplies advanced at a rapid rate, until, on the first of May, 1882, in the item of provisions alone, the cost of purchase was thirty-nine per cent. higher than a twelve-month before. Wages rated fourteen and a half per cent. higher, feed and produce fifty-three per cent, and building material, etc., ten per cent; the general average of advance on all articles used in the hospital being nineteen per cent. These figures have been very slightly reduced in the

line of breadstuffs, by a decline in the price of flour. The rates for other articles remain about the same as on the first of May, 1882.

Bituminous coal, which in 1880 was purchasable for three dollars and twenty-nine cents per ton, is now held at from four dollars and twenty-five cents to four dollars and fifty cents per ton, on track in Chicago.

In consequence of an increase in railroad rates, of twenty-eight cents per ton for transportation from Chicago to Elgin, the sum of about fourteen hundred dollars has been added to the cost of the coal consumed in the hospital, placing that consumption at twenty-five hundred tons per year. This is, however much less than the actual consumption, and the basis of twenty-five hundred tons cannot be adopted, unless the improvements asked for in the heating apparatus are made.

The firmness of the general market indicates that there will be no material reduction in the prices paid for these necessary articles. In our opinion the wants of the hospital cannot be met during the next two years by a less sum than one hundred and six thousand dollars *per annum*.

For repairs and contingent fund an appropriation of six thousand dollars *per annum* will be necessary, to cover the expenses of work which must be done to preserve the property from injury. In consequence of the increased cost of articles of subsistence, drafts have been made on the repair and contingent fund, which have forced the postponement of important repairs which would have otherwise been made. Among these is the re-laying of hard-wood floors in several of the wards of the north wing, putting an additional story over the laundry and painting the outside wood-work, cornices and cupolas of the south wing, the cost of which will be fully three thousand five hundred dollars. For this reason the amount is larger than that asked for in previous years.

For the benefit of those interested, we publish elsewhere in this report the opinion of the attorney-general of this state, relative to insane convicts.

We regret to be compelled to report the death of one of the members of the medical staff of the institution, Dr. O. C. Oliver, which occurred December 24, 1880, of typhoid fever. Dr. Oliver was a gentleman possessing abilities of the highest order in his chosen profession. Though he had not yet reached the line of middle age, he was known among the medical profession as an accomplished microscopist and pathologist. The elaborate and accurate pathological work performed by him, the result of which appeared in our last biennial report, abundantly attests his capacity in this field of research, and is evidence of the brilliant future which would have been his, but for the intervention of the hand of death. Appropriate resolutions were adopted by the board, expressive of their sorrow and their sense of the loss sustained by the institution and the profession, of which he was a valued member.

Another of our medical staff, Dr. J. J. Crane, first assistant physician of the hospital, resigned his position last July, for the purpose of engaging in the practice of his profession in New York. He had

served us well and faithfully for a period of over four years, and he carries with him in his new field of labor our heartiest wishes for his success.

To the superintendent, Dr. E. A. Kilbourne, and his associate officers our thanks are due for the able and efficient manner in which they have discharged the duties devolved upon them.

C. W. MARSH, *President*,
I. C. BOSWORTH,
FREDERICK STAHL. } *Trustees.*

ELGIN, Illinois, *October 1, 1882.*

LIST OF APPROPRIATIONS REQUESTED.

1.	Changes in heating-apparatus.....	\$18,881 77
2.	Two new boilers.....	4,340 00
3.	Improvement of grounds, \$1,000 <i>per annum</i>	2,000 00
4.	Artificial lake or reservoir.....	5,000 00
5.	230 rods of fence and two gateways.....	3,000 00
6.	Library for patients, \$500 <i>per annum</i>	1,000 00
7.	Electrical and pathological apparatus.....	2,000 00
8.	Machinery for laundry.....	2,200 00
9.	Ordinary expenses, \$106,000 <i>per annum</i>	212,000 00
10.	Repairs and improvements, \$6,000 <i>per annum</i>	12,000 00
Total.....		\$262,421 77

REPORT OF THE SUPERINTENDENT.

To the Board of Trustees.

GENTLEMEN:—I have the honor to submit in detail the results of another biennial period in the history of this institution, closing September 30, 1882.

STATISTICS.

On the hospital register, October 1, 1880, there were five hundred and twenty-five patients; of whom two hundred and sixty-seven were males, and two hundred and fifty-eight females.

Since the above date, the admissions numbered three hundred and eighteen, one hundred and sixty-one men and one hundred and fifty-seven women; one hundred and eighty of whom were native-born and one hundred and thirty-eight of foreign birth.

The number discharged was three hundred and twenty-three, one hundred and sixty-eight men and one hundred and fifty-five women; of these, fourteen men and twenty-one women were transferred to the eastern hospital at Kankakee, and four men and thirteen women to the central hospital, at Jacksonville.

The number remaining in the hospital, September 30, 1882, was five hundred and twenty; two hundred and sixty men and two hundred and sixty women.

The total number under treatment has been eight hundred and forty-three; four hundred and twenty-eight men and four hundred and fifteen women.

Of those admitted, six were sent to us from the penitentiaries, and four on a mittimus from the courts; of the latter, two were found to be "not insane" and were released.

One hundred and ninety-nine were from nine to forty years old and one hundred and nineteen were from forty to eighty-five years old.

Eighty-three had been insane less than three months; sixty-eight from six to twelve months; one hundred and fifteen, from one to thirty years; and in forty-nine the duration was unknown.

Of those discharged, eighty were restored; forty-six men and thirty-four women; fifty-eight were "much improved," thirty-three men and twenty-five women; fifty-two were "improved," eighteen men and thirty-four women; eighty were "unimproved," forty-eight men and thirty-two women; fifty died, twenty-one men and twenty-nine women; and three were "not insane."

Of those restored, thirty-six men and twenty-four women were recoveries from the first attack of insanity; five men and five women from the second attack; one man and one woman from the

third attack; two women from the fourth attack; one from several attacks; and in four men and one woman the number of the attack was unknown.

The percentage of recoveries on the number admitted, was 25.15; and on the number discharged 24.76; the percentage on all under three months' duration was 45.78.

The deaths number fifty, twenty-one men and twenty-nine women; the causes of which were as follows: Exhaustion from chronic mania, seven; phthisis pulmonalis, eight; apoplexy, six; pneumonia, three, carcinoma of stomach, one; acute mania, three; acute mania with carcinoma of breast, one; paralysis of heart, one; exhaustion of dementia with complications, four; œdema of lungs, one; melancholia with complications, seven; melancholia terminating in suicide, one; status epilepticus, three; meningitis, two; general paralysis, one; typho-malarial fever, one.

The ratio of mortality to the average number under treatment (520.73) was 9.6; the ratio of mortality to the whole number under treatment was 5.9.

One case of acute mania was brought to us in a moribund state, and died within forty-eight hours after admission, thus swelling our death record. This is the second case of this kind we have had to report, and we feel that no language is strong enough to condemn the inhumanity of such an act.

One death from meningitis, reported above, we feel might have been averted, and was brought about by distressing circumstances, a brief recital of which may serve as a warning to friends of patients who are eager to remove them, in opposition the best judgment of the physicians in charge.

The patient, a woman of fine physique, thirty-one years of age, was admitted to the hospital while suffering from an attack of deep melancholia. At the end of six months' treatment, she emerged from this state, became cheerful and rational in conduct and conversation, so much so, that on being visited at that critical period by friends, they declared that she was fully recovered and insisted upon her immediate removal from the institution. This course was strongly opposed on the ground that the change in her condition was so recent as to afford no rational warrant that she would be able to bear the strain and excitement of a return to her former surroundings, but that a further stay in the hospital was necessary to confirm the convalescence seemingly so well assured. In spite of these arguments, the patient was removed, only to be returned after six days, in scarcely a recognizable condition and laboring under an attack of acute meningitis. Although she received the closest care and attention that medical skill and nursing could afford, she died within two weeks from the time of her unfortunate removal.

IMPROVEMENTS AND EXPENDITURES.

For several years past it has become more and more apparent that sooner or later some radical changes would have to be made in the heating apparatus of this institution to bring the per capita cost of warming the same down to where it should be.

Immediate necessities have been bridged over from time to time by new additions and partial renewal of the old apparatus, and in 1876, upon the recommendations of Mr. Carlile Mason, by more extensive

repairs and changes, involving the removal and resetting of the old boilers in larger and better quarters newly prepared for them, your board feeling exceedingly loth, by reason of the infancy of the institution, to ask the legislature for funds ample enough to enable us to thoroughly reconstruct our works, or better still, to do away with the old system altogether and put in its place that which time had demonstrated to be vastly superior in its economical workings to the system in vogue here.

CHANGES IN HEATING-APPARATUS.

Early in the winter of 1880 and 1881, shortly after the submission of our last biennial report, it became painfully manifest that temporizing with this evil would do no longer. The old coils and return-pipes under both north and south wings were giving out with alarming frequency, exciting the gravest apprehension as to whether, should the weather prove especially severe, we should be able to pass the winter in safety or not. This danger confronting us left no alternative but to bring the whole matter to the attention of the visiting committee of the legislature, upon the occasion of their official visitation and inspection of the hospital, early in the session of 1881, and have the subject thoroughly investigated and discussed. The result of this conference found expression in the report of the committee, and in a bill which was introduced and passed by the last general assembly, appropriating certain sums to be expended in the correction of the difficulties disclosed, amounting in the aggregate to twenty-eight thousand one hundred dollars, exclusive of the item for covering steam-pipes (two thousand eight hundred and eighty-five dollars), which was a necessity in any event.

Special appropriations were also made for sundry other purposes, two of which were intimately associated with the heating-apparatus, viz: that for fire-pump and the artesian well.

The several items properly included under the head of heating apparatus, are nine in number, to-wit: ten thousand dollars for four new boilers; three thousand five hundred dollars for new smoke-stack; eight hundred dollars for drop-flues; one thousand one hundred dollars for heater and purifier; two thousand five hundred dollars for adding to power of engine, making new shafting, etc.; one thousand two hundred and fifty dollars for new fan; five hundred dollars for sewer ventilation, etc.; four thousand dollars for cast-iron radiators; four thousand four hundred and fifty dollars for new engine and pump-house.

Of the above appropriations, only one—that for new fan—remains untouched, though an order has been placed with Mr. B. F. Sturtevant, of Boston, for one of his celebrated blast-wheels for ventilation, which is expected to arrive in a few days. The other sums have been judiciously expended in furtherance of the objects sought, with the exception of small balances here and there, which will be needed to cancel indebtedness contracted and properly chargeable to these funds.

The new smoke-stack is a well-proportioned and symmetrical structure, one hundred and thirty feet high above ground, and six feet diameter in the core, surmounted by heavy cut-stone caps and trimmings, which give to the shaft a pleasant monumental effect.

The draught is excellent, and the wisdom of its erection has been fully demonstrated, in the better combustion of the fuel and conveyance of the smoke clear of the hospital buildings.

The drop-flues connecting this stack with the boilers were contracted for at the same time, and the work was prosecuted together.

The heater and purifier put in this year is also serving its purpose well. The saline and earthy matters held in solution in the water, and heretofore giving us so much annoyance by the precipitation of scale in the boilers, are now almost wholly extracted before entering them. It was designed by Mr. A. L. Ide, of Springfield, and its operations have proved unexpectedly satisfactory.

A new sixteen by forty-two inch, automatic cut-off engine (Reynolds' Corliss), has been purchased with the two funds provided for that purpose by the Thirty-First and Thirty-Second General Assemblies, and set up in the new engine-room during the past season, supplanting the old slide-valve engine, which was found inadequate to the work put upon it, and withal too expensive in its running operations to admit of its serving us any longer. There remains an unexpended balance from the appropriation of last year of five hundred and forty-five dollars and forty-three cents, which will soon be consumed.

A new line of shafting has also been run through the laundry and boiler-room, connecting that in the carpenter-shop with the main line; this has enabled us to dispense with a small engine employed to drive the machinery in this department, and to place the load upon the new engine.

It is to be regretted that the amount allowed by the legislature for "connecting sewer with ventilating shaft and completing air ducts" fell so largely under the estimated cost (fifteen hundred dollars) as to make it impossible to do more than one-third of the work contemplated. As it stands, a further sum will be required to complete this necessary improvement.

The old return-bend coils under the north wing, with their brick housings, have been removed, and replaced by Gold's cast-iron radiators (Utica pattern), and the same properly enclosed and connected, the arrangement being such that each chamber or stack of radiators goes to but one floor; in other words, every floor has its special series of radiator-chambers, so that each can be warmed independently. Every radiator has its special valve and return-branch from the main, so that it does not cut off the heat from any other place. This method of distributing the heat has required a vast amount of mason-work in changing the heaters and ventilating registers in the walls, in cutting new openings and closing the old ones, in nearly every flue in this wing. The appropriation for this purpose has been expended.

In noting the expenditure of the fund for the erection of a new engine and pump-house, it is a pleasure to be able to state, that we not only obtained desirable quarters for this machinery—in a handsomely finished room 36 x 42 feet, with work-shops overhead—but were enabled, by the removal of the adjoining laundry-roof and the carrying up of the brick walls on the north and west sides of this building to the height of another story, to secure six good-sized bedrooms, for the accommodation of our help; a provision which was greatly needed.

A skylight, ten by twelve feet, with an Emerson ventilating tower, was also inserted in the roof of the laundry, giving a satisfactory increase of light and air in this department. The employment of our own corps of workmen, under the intelligent supervision of Mr. Slade, alone made it possible for us to accomplish this additional work, which, it should be stated, was not contemplated in the appropriation.

In conformity with the recommendations of Mr. Levi R. Greene, C. E., to whom was intrusted the work of remodeling our heating apparatus, the walls of the boiler-house have been underpinned and the floor lowered to the depth of three feet.

This necessitated the removal, two at a time, of all the old boilers, and upon the completion of the work, four new steel boilers, provided by the legislature, were set up, arranged in batteries of two, and properly connected with the steam drum, which had been lengthened for their accommodation.

The dimensions of these boilers—sixty inches by sixteen feet—are much larger, being rated at twice the horse-power of the old ones, and if the two others asked for had been granted by the last general assembly, our equipment in this respect would have been complete; in consequence of their failure to make this necessary provision we were obliged to reset two of the old boilers (hardly worth the brick and mortar to do it) in order that the engineer might have an opportunity for frequent inspection and cleansing of the new ones. It would have been wiser for the state to have given the number required in the first instance and so saved the expense that must be duplicated when these shall be supplanted by others.

A new fire-pump, capable of throwing four one-inch streams, has been purchased and set up in the engine-room the past season. When the proper connections are made it will afford additional security in case of fire—though it is to be hoped that any occasion for its use may be long postponed. An unexpended balance of one hundred dollars remains from the appropriation for this purpose.

Artesian Well.

The appropriation of five thousand dollars for an artesian well has been expended as contemplated in the act. Bids were invited from responsible parties engaged in this work, and the award was finally made to Mr. W. H. Gray, of Jefferson, Ill., the lowest bidder, he entering into contract to “bore the well to such a depth as might be required, not exceeding twenty-three hundred feet, and to furnish and put down thirteen hundred feet of three-inch galvanized iron pipe, or so much thereof as might be needed to completely shut off all sulphur or other objectionable water from the soft water coming from the sand-rock, so that said soft water should be fit for boiler use, and to complete the well on or before October 20, 1881.” Owing, however, to unforeseen accidents and delays in boring other wells in this vicinity, the machinery employed by him could not be released in season to permit of his entering upon the work here much before the first of November, 1881. The well was not completed and piped until June of this year, hence we failed to reap the advantage of this water in our boilers during the past winter.

Within a few years two artesian wells have been bored in the city of Elgin—one during the past season at the watch factory, distant only a mile or so from the hospital—each throwing a stream to the height of twenty-five feet above ground; but the altitude at the hospital being about thirty-three feet greater than at the watch factory, the water of our well, which probably comes from the same vein, fails to reach the surface by some five feet, which distance it will have to be pumped. This difficulty was apprehended and discussed before the well was bored, but the cost involved in pumping the water is as nothing compared with the benefits obtained therefrom. It has now been in use several months, and while it has not been found free from saline or earthy matters to that degree we had looked for, still its use in our boilers has not been attended by the formation of scale, which has heretofore been so annoying to the engineer, and which has to a large extent been the cause of the previous extravagant consumption of fuel.

Impure water, besides being a great annoyance, is a constant source of loss to users of steam. An authority remarks that "there is scarcely any section of this country that is not affected by it. Most waters contain more or less vegetable and earthy matters in suspension, and all have in addition solid matter in solution, in greater or less proportion, and many of these solids are capable of being precipitated by heating the water to a high temperature." This is what takes place in the boiler, and the precipitated salts settle to the bottom, or rest on the sides of the boiler, and there become hardened into scale.

Dr. J. G. Rogers, who has given the subject careful study, says, "that the conducting power of scale compared with that of iron is as 1 to 37.5, and that it has been demonstrated that each sixteenth of an inch makes a difference of fifteen per cent.; so that one-fourth makes sixty per cent. loss. The minerals giving the most trouble are sulphate of lime, carbonate of lime, oxides of iron, magnesia, alumina and silica. The most troublesome and dangerous of these is the sulphate of lime, which results from the combination of oxide of calcium with sulphuric acid; this is precipitated by heat in the form of small crystals or thin flakes, and in that form floats to where there is least agitation in the boiler and settles, forming a thin white scale, which admits of neither contraction nor expansion.

In our search for soft water for the boilers, we were compelled to go to the depth of two thousand and sixty-three feet, but at a distance of one thousand to twelve hundred feet a vein of sulphur water was encountered, which was separated from the lower stratum in the manner provided for in the contract.

This sulphur water is made use of to some extent in the treatment of patients suffering from eruptive diseases and other associated affections, and we hope that it may be found to possess decided medicinal qualities.

The analysis of this water and that from the deeper vein was made by Dr. Walter S. Haines, Professor of Chemistry and Toxicology, Rush Medical College, Chicago, and will be found in the appendix to this report. As will be observed by an inspection of this analysis, the water of the artesian well contains a moderate amount of earthy and saline matters, and it might be supposed that

the use of that coming from the lower stratum would rapidly produce an incrustation in the boiler. Such, however, is found by actual practice not to be the case.

We have been using this water, for boiler purposes, since last July, without the slightest production of scale, and that, too, in spite of the fact that during a part of this time we have used a certain amount of river-water mixed with that from the artesian well. It is true that this water, when subjected to heat in the boiler, throws down a considerable deposit of mineral matter, but its chemical character and physical aggregation are such as to cause its precipitation in a loose amorphous condition, which does not adhere to the iron, but settles as a soft, non-coherent mud, to the bottom of the boiler, whence it can easily be removed.

Moreover, the use of a heater, to which reference has already been made, deprives the water, before it enters the boilers, of a considerable part of its mineral impurities, so that the amount of deposit produced in the boilers is thus much reduced.

Whether we shall be able entirely to dispense with the water-works at the river, it is yet too early to say, as we have not been able to fully test the capacity of the well, owing to the smallness of the pump temporarily employed.

Ice-House.

The ice-house provided for has not been built, though a plan has been secured and a portion of the funds expended for lumber.

It is our purpose to erect the same another season, when our carpenters will have more time to superintend its construction; the amount appropriated for this purpose being insufficient to admit of its being put under contract.

Floors, Painting, Etc.

Before the close of the last biennial period a greatly needed improvement was commenced, by the taking up of the hard-wood floor in the main hall or office floor of the centre building—which was afterwards relaid in the amusement hall, as was noted in our report. This floor was replaced by one of marble in two shades and of handsome design; it was remarkably well laid, and is a decided improvement in every way, making the hall lighter and more cheerful and far more suited to an institution of this character.

A new hard-wood floor has also been put down in one of the larger wards in the north wing. The corridor and parlor of one ward, all the bed-rooms and private parlors of two other wards, together with eight dining-rooms, have been painted; three parlors have also been decorated, and the men's cottage has been painted outside and inside, and grained and varnished throughout. Three rooms in the administrative building have also been tastefully painted and frescoed.

Telephone.

Our connection with Elgin, Chicago and neighboring towns by telephone is a constantly appreciated convenience, enabling us to do the business of the hospital with greater dispatch. Many friends of the patients and county officers come from a distance to avail them-

selves of direct communication through the telephone, a facility, the usefulness of which will increase proportionately as the knowledge of the public increases of its adaptation to the ordinary intercourse of life.

FURTHER PROVISION FOR THE INSANE.

Notwithstanding the state of Illinois has provided four large institutions for the care of its insane, still the cry goes up for "more room." We are constantly obliged to return chronic cases to their homes, or to the county poor-houses and jails, in order that more recent and curable cases may be received.

Whilst this method of procedure is perfectly just as regards the more hopeful cases, it is very unjust to the chronic class and the public at large, and complaints are rightly made that these homes and county institutions have neither the knowledge nor the requisite appointments for their proper care and detention. There is, besides, a very natural feeling of insecurity in communities where persons known to be insane are allowed to run at large, since, however apparently harmless they may be, an insane outburst or homicidal manifestation is liable to occur at any time, and that when least expected, as has been evidenced in several recent tragedies occurring in different parts of the country.

Plain substantial structures for the accommodation of the chronic insane might be erected at a less cost than is required for the treatment and care of acute cases, either as a separate institution at some point in the western part of the state, or as detached blocks in connection with some of the existing institutions. The former plan would undoubtedly be the best.

CRIMINAL INSANE.

We have several times called the attention of the legislature to the necessity of making separate provision for the criminal and convict insane. The frequency of escapes effected by this class of patients, and the demoralizing influence exerted by them in the wards, demonstrate the desirability of establishing an insane department in connection with one of our penal institutions. This arrangement would not only relieve the hospitals from the presence of an exceedingly dangerous and objectionable element, but room would thus be made for the reception of a more deserving class of patients, who are now denied the benefits of hospital treatment by reason of the enforced custody of the criminal classes.

Dr. Draper well remarks: "If it is right to separate this class from society when sane, it is right that they should be separated from the general class of the insane when laboring under mental disorder. It is wrong to be obliged to convert the asylum into a prison, and it is an injustice, if not an outrage, to place the convicted malefactor in forced relation with the worthy and law-abiding, but unfortunate citizen."

RESTRAINT AND PAROLE.

The use of mechanical restraint and seclusion has been greatly diminished during the past two years. A system of requiring daily

records or reports from each ward has tended to bring about this desirable result, which has been achieved only through increased attention and watchfulness on the part of the attendants.

Whilst we feel that mechanical restraint cannot be entirely dispensed with, and is much less irritating to the patient than many other forms of control now employed in some hospitals, whose watchword "is no restraint," our belief is that we have reached nearly if not quite the minimum of restraint and seclusion. It shall certainly be our constant aim to grant all the liberty that is compatible with the safety and well being of those committed to our care.

Although we cannot make the attractive announcement of "unlocked doors"—aside from our two cottages, which always stand open—there is nearly ten per cent. of our patients that have free ingress and egress, their *parole d'honneur* being seldom violated.

In this connection it may not be amiss to call attention to the fact that those countries, notably England and Scotland, where the no restraint and "open door" system is emphasized, possess a much milder and equable climate than that of the United States. In view of the rigors of our winter season and of the terrible consequences resulting from exposure, we cannot view with indifference the escape of patients, but feel obliged to use every precaution for the protection of those who, for the most part, are so little capable of caring for themselves. We will not here dilate upon the anxiety and annoyance occasioned the friends of those who escape, nor upon the expense incurred in their return to the hospital, as this must be evident to every reflecting mind. Enough has been said to show that, for the sake of all parties concerned, caution has to be exercised in granting the valued privilege of parole.

CURRENT NEEDS.

Within a few days after the adjournment of the last general assembly, and before any action was taken looking to the expenditure of the funds placed at our disposal by this body, an invitation was extended to Mr. Levi R. Greene, representing the Walworth Manufacturing Company of Boston, Mass., and Mr. A. L. Ide, of Springfield, Illinois, two mechanical and expert engineers who have had large experience in the heating of public buildings, to visit the hospital and "investigate and report upon needed changes in our heating apparatus."

This step was taken with the view of obtaining the best information possible upon these disputed points and ascertaining, as well as might be, just what was required, so that not a dollar of the money appropriated by the state should be expended unwisely, or without an intelligent comprehension of what was to be accomplished by it.

This, of course, involved a thorough examination of our works—the building, its ducts and flues and modes of ingress and egress for the air; cubic feet of space to be warmed, and the distance to which the live steam must be carried before making its return to the boilers; number, distribution and area of the fan-ducts; capacity of the fan, and many other points necessary to the solution of the problem before us.

The result of their investigations with their conclusions and recommendations is to be found in the report of Mr. Greene, herewith annexed.

Having confidence in the expertness of these gentlemen to pass upon the question submitted to them, their views met with the approval of your board, and the alterations made in the heating-apparatus since then, have been in strict conformity with their recommendations, in which a complete change from the high to a low pressure system was advocated.

The funds, however, at our command, would admit of our doing but little more than to alter over one wing. This has been accomplished in a very satisfactory manner, and the diminished cost and labor in warming it, as well as the more equable temperature maintained, is distinctly noticeable.

To reap the full benefit, however, of what has been done, a further appropriation will be necessary, in order to replace the coils under the central building and the south wing with cast-iron radiators, radiator-boxes, piping and connections, together with new supply and return pipes for both wings, and larger main leading to and from the boilers; extension of air-ducts under the south wing; putting in cross-walls or bulkheads in the heating plenums, and for the necessary mason-work in changing the heating and ventilating registers in all rooms and corridors of this wing, to conform to the system adopted in the north wing, of warming each floor independently.

The coils and return pipes under the south wing and central building are giving us a great deal of trouble; the threads upon them have become so weakened by rust that they cannot resist the pressure put upon them, and the bursting of some one or more of the pipes is an almost daily occurrence.

The necessity of an appropriation for their renewal is therefore imperative, and whether action may or may not be taken by the legislature upon other recommendations of your board, this matter should be attended to.

There will also be required two new steel boilers of the same dimensions as the new ones, to replace the two small ones worn out and practically condemned two years ago.

This want was brought to the attention of the last legislature, and their condition at this time is such as to make it sheer folly to spend another dollar upon them in the way of repairs.

The estimated cost of these improvements will be found in detail in the appendix to this report, and is as follows:

For radiation for south wing and central building, including globe and automatic air-valves, expansion joints, etc.	7,897 70
For pipe, fittings, labor, etc.....	7,677 55
For radiator-boxes and other carpenter work.....	1,059 50
For altering heating and ventilating flues, together with necessary mason-work to complete air-ducts and ventilating shafts.....	2,247 02
Total.....	<hr/> \$18,881 77
For two new boilers, sixty inches by sixteen feet, with fire-fronts, setting and connections.....	\$4,340 00

Front Fence.

The change of the public road or highway running through the hospital grounds, so as to incorporate three hundred feet more in the fore-ground, has been completed, and found to be a most desirable improvement; the main drive-way has been changed, and bordered with rows of large white elms, a portion of the new enclosure graded and seeded down, and we are now in great need of a substantial and tasteful fence and gate-ways to inclose the same. The old fence, which we were compelled to reset temporarily, is shabby and unsuitable, and it is earnestly hoped that the legislature will see the wisdom and propriety of granting an appropriation for this purpose, for which, at this time, fully three thousand dollars will be needed.

Reservoir.

By the alteration in the road, natural depressions in the lay of the land have been taken into the immediate enclosure, which can be utilized for the basin of a lake or reservoir, four hundred feet long, by one hundred and fifty feet wide and from six to eight feet deep.

We have repeatedly called attention to the imperative necessity of having a large body of water close at hand for use in case of conflagration, and would again emphasize the importance of such a provision. We trust that the legislature will awaken to a realization of its responsibilities in this matter, and appropriate the requisite amount of five thousand dollars, which demand is based upon careful estimates elsewhere submitted.

Laundry Machinery.

The washing-machines in the laundry have been in constant use since the opening of the institution, and are worn out, besides being too small for the amount of work to be done.

The mangle is an old-fashioned, clumsy affair, totally inadequate to the discharge of the labor that should be intrusted to such machinery.

An elevator is also greatly needed to hoist clothes to the dry-room.

For two brass washing-machines, one steam-mangle and one freight-elevator, the sum of twenty-two hundred dollars will be required, as will be seen from the estimates given in the appendix.

Library, Electrical Apparatus, etc.

The hospital library, although well selected and adapted to the requirements of such an institution, has never exceeded six hundred volumes. These have been in constant circulation, and many of them, despite the care exercised, show the effects of hard usage, while some have been entirely and unavoidably destroyed.

An appropriation of five hundred dollars *per annum* is asked to enable us to make considerable additions of new books, and to subscribe for various periodicals and magazines for the convalescent wards.

A fund should also be placed at our disposal for the purpose of equipping this hospital with needed scientific and electrical apparatus for the proper treatment of patients likely to be benefited by these agencies.

The widened sphere of electro-therapeutics in the treatment of the sympathetic system, the brain and spinal cord, renders necessary the procurement of a complete outfit for general and localized electrization, as well as for the static application of this agent. Modern neurologists make extensive use of electricity in all its varied forms, in the treatment of many affections of the nervous system intimately associated with disorders of the mind; the tonic influence of this agent in cases of debility and impaired nutrition is beyond question, and I should feel myself to be derelict in my duty, did I not urge with some force the propriety of a small appropriation being made this winter for the purchase of these appliances, as well as for pathological research, the importance of which to science has been dwelt upon at some length in previous reports to your board.

An appropriation of two thousand dollars would be little enough to meet this want.

Grounds.

The usual allowance of one thousand dollars *per annum* for improvement of grounds is again solicited this year, in order that the work of improvement may go steadily forward.

The addition to our front and the plan adopted for its embellishment as well as that of the forest park demands an annual outlay of this amount.

Maintenance and Repairs.

The estimate made two years ago by your board for the maintenance of five hundred and twenty-five patients to July 1, 1883, was one hundred and three thousand two hundred and fifty dollars *per annum*. The amount allowed by the legislature was ninety-eight thousand dollars for the first year, and one hundred and two thousand dollars for the second year, or an average of one hundred thousand dollars *per annum*.

The fear expressed at that time that prices would not be lower in any direction for the next two years, has been abundantly realized. Dating from the adjournment of the legislature in May, 1881, there was a steady advance in the price of almost every article of living. This was especially noticeable in the line of breadstuffs, meats and other necessaries that enter into the daily consumption of the house. This advance was continued, until in May last, it reached on these commodities, fully thirty-nine per cent. In other directions, notably in the cost of fuel, feed, building material, etc., the advance was proportionate. This taxed our resources to the utmost, and it was only by curtailing our expenses in the severest manner, in every department of the house, that we are able to show no deficit at the close of the year ending September 30, 1882.

It should be remembered, however, that at the beginning of the last biennial period we fortunately had on hand a cash balance of seven thousand and eleven dollars and forty cents, without which,

it would have been impossible for us to have shown even the small balance of six hundred and eighty-five dollars and twenty-one cents, which we now report.

As yet, there has been no appreciable decline in the price of anything except flour, and it is not expected that there will be for some time to come.

In 1879, the cost of soft coal, delivered at the hospital, was three dollars and nineteen cents per ton; in 1880, three dollars and twenty-nine cents; in 1881, four dollars and ninety-six cents; in 1882, five dollars and forty-seven cents.

The special two-thirds rate granted by the railroads for the transportation of soft coal from Chicago, up to August 1, 1882, was fifty-six cents per ton. Since revising the tariff to conform to the requirements of the new law, we have been officially notified, by both roads leading to Elgin, that on and after the above date the rate would be eighty-four cents per ton; an increase of twenty-eight cents over former rates.

This, multiplied by the number of tons likely to be consumed during the next two years, should the proposed changes be made in our heating apparatus, viz:—two thousand five hundred tons per year, amounts to the respectable sum of fourteen hundred dollars; while the increase on other freights would be about four hundred dollars.

The price of good bituminous coal, fit to put under our boilers, has also advanced; and we now have to pay from four dollars and twenty-five cents to four dollars and fifty cents per ton on track in Chicago, according to the season. Adding freight and hauling, the cost, delivered at the hospital is about five dollars and forty cents per ton.

In view of what has been stated, and the firmness of the market in all leading lines of produce at this time, I do not see how the interests of the hospital can be subserved with a less appropriation than one hundred and six thousand dollars *per annum* for the ensuing two years, which amount I would respectfully urge should be granted by the next general assembly.

The amount required for repairs and contingent fund for the next two years has been placed at six thousand dollars *per annum*, a sum slightly in excess of that thought necessary in previous years. This is due to the fact that we shall be called upon to make numerous repairs, during the coming season, of more than ordinary magnitude, but which cannot be postponed any longer, without injury to the property of the state.

The one item of painting the outside wood-work, cornices, cupolas and window-guards of the south wing, including the women's cottage and the veranda of central building will cost fifteen hundred dollars, as per estimate submitted.

That for laying six new floors in the violent wards of the north wing, the urgency of which is very great, is eleven hundred dollars; and the cost of lowering the floor of the coal-house and connecting duct, heating new rooms for the help, and putting an additional story over laundry for storage purposes will not be less than sixteen hundred dollars, leaving but little the first year for other improvements and exigencies, for which there should always be made a liberal allowance.

The improvements just noted might with propriety be covered by a special appropriation, in which event the customary allowance of five thousand dollars *per annum* would be sufficient.

AMUSEMENTS AND ACKNOWLEDGMENTS.

Every day, when the weather is favorable, large numbers of men and women patients may be seen walking about the grounds or towards the town. In summer time, especially, they are out of doors most of the time, sitting or lying on the grass in the shade of the trees, or in summer-houses; playing croquet on the lawn, or participating in games of foot and base-ball.

Occasional drives, with now and then a basket picnic, also help to diversify hospital life. The weekly dance is always a source of enjoyment to a large portion of the patients and employees, and evening card-parties meet nearly every week, in the male and female wards alternately, both sexes participating in this recreation.

The following entertainments have been given at short intervals:

Play: "A Regular Fix".....	Hospital Troupe.
Tableaux: "Dutch Justice" and Dance.....	Hospital Troupe.
Comic Farce: "Jumbo-Jum".....	Hospital Troupe.
Masquerade.	
Entertainment.....	"Brewster Bowen Combination," and Miss Farrington, of Vermont.
Dramatic Performance.....	"Jack's Theatre Company."
Comic Farce: "The Mischievous Nigger".....	Hospital Troupe.
Masquerade.	
Farce: "A Close Shave".....	Hospital Troupe.
Card Party, with Refreshments.	
Farce: "Sarah's Young Man".....	Hospital Troupe.
Dramatic Performance: "Caste".....	Company from Elgin.
Play: "I'm not Myself at All".....	Hospital Troupe.
Elocutionary and Musical Entertainment....	Prof. and Mrs. Lyman, Miss Cora Knight and Mr. John E. McWade.
Open Air Concert.....	Elgin Military Band.
Dramatic Performance: "Last Loaf".....	Elgin Troupe.
Play: "Quiet Family," etc.....	Hospital Troupe.
Concert.....	Georgia Jubilee Singers.

With all these entertainments, vocal and instrumental music has been rendered.

To all friends who have assisted us in our efforts to provide amusements for the patients, our earnest thanks are due.

Thanksgiving-day of each year was observed as usual, our inmates enjoying a bountiful spread of turkey and other holiday delicacies.

On account of the death of Dr. Oliver occurring at that time, the usual Christmas festivities of 1880 were omitted, and the presents were quietly distributed in the wards.

The Christmas of 1881 was joyously celebrated by the gathering of our entire household in the beautifully decorated amusement hall, where carols and music by a full string-band were rendered, and two elegantly ornamented "Jacob's ladders" yielded a profusion of gifts. Our grateful acknowledgments are hereby tendered to all who generously contributed both money and presents for the occasion.

Donors of money to the general fund for Christmas festivities are as follows: Dillon & Arvedson, Field, Leiter & Co., Marshall Field & Co., Crane Bros., James S. Kirk & Co., Samuel C. McDonald, John Harmon, S. Halverson, C. F. Johnson, James Mullen, W. A. Ruff, R. W. Trimmingham, Johnson Wilson, C. Mason & Co., Walter Miller, Armour & Co., Goodman Halverson, Henry Williams, S. R. Boardman, J. R. Blake, H. E. Kleimenger, Meinhard Kleimenger, L. Lowell, M. J. Braiden, M. D. Wells & Co., Mrs. E. A. Stadden. Edward James, Carl Samz, Mrs. J. A. Carpenter, Wm. H. Condon, Elgin Milling Co., D. H. Butler & Co., Board of Supervisors, Lee county.

In this connection we would call special attention to the donation made by Lee county, for the benefit of her patients; the practice is certainly a good one and well worthy of emulation by other counties.

Donations of candy, fruit, etc., to the general fund, were made by the following: Grote & Ettner, Schults & Todson, Sylla & Lasher, Bosworth & Peck, T. F. Swan, J. S. Kirk & Co., Franklin McVeagh, Mrs. Lomax, Mr. Fyfe, Charles Patten, John Muir, Mr. Lowe, B. Merrill, Patrick Devine, Westerman & Maule, F. S. Bosworth, Palmer & Hinsdell, Wait & Burdick, G. P. Lord, J. B. Sullivan, Mary Bacher, Libby N. Pierce, Mr. Fink, Miss Mamie Cook, C. W. Webster, Laflin & Co., C. B. Wells, F. B. Rice and T. H. Lanyon.

The editors and proprietors of the following newspapers have our hearty thanks for gratuitous copies of their publications, sent regularly to the institution: Dixon Telegraph, Elgin Daily News, Ottawa Republican, Ogle County Reporter, The Field and the Signal, of Chicago; Aurora Beacon. Galesburg Republican, Kewanee Courier, Pontiac Free Trader, The Humane Journal, The German Advertiser, Elgin Advocate, Galesburg Register, Wheaton Illinoisan, The Standard, Freeport Anzeiger, Amboy Journal, Kewanee Independent, Pontiac Sentinel, Staats-Zeitung, Onarga Review, and the "Faith's Record" (ten copies).

The privilege of perusing a home newspaper, when absent from home, is appreciated by all.

We are also indebted to the ladies' missionary society of Stillman Valley, for two hundred and twenty-eight magazines, etc., and to Mr. Oppenheimer for thirty watermelons.

But the largest gift we have to acknowledge is from the American Bible Society, a donation of Bibles, testaments and psalms, in the English, German and Swedish languages, to the amount of one hundred and sixty-seven dollars and ninety-five cents, a favor secured to us through the earnest solicitation of the Rev. Dr. Cheney, pastor of the First Baptist Church in Elgin. This being brought to the attention* of the board, appropriate acknowledgment was made of the same.

Religious services have been held each Sunday afternoon, in the chapel of the institution, conducted, as usual, by the ministers of different denominations in Elgin, a plan which seems to give the greatest satisfaction to the inmates, representatives of such varying religious beliefs. These services have been uniformly well attended, and the deportment of the patients on such occasions marked by reverence, attention and decorum.

PERSONAL CHANGES.

Before our last biennial report had issued from the press, our medical staff suffered a severe loss in the death of its special pathologist and assistant, Dr. O. C. Oliver, which occurred December 24, 1880. He had been a diligent student in his profession for many years; had spent fifteen months in Europe in the study of his specialty under the celebrated Prof. Charcot, of Paris, and his enthusiastic interest in his work gave promise of great usefulness in the future. As a histologist and microscopist Dr. Oliver had few equals. His photo-micrographs and original methods of research in this department had already won for him high praise, both at home and abroad. Some fine plates, illustrative of his skill and training in this branch of scientific investigation, appeared in our last report. As a gentleman of refinement and culture he had won the esteem and friendship of all with whom he was associated, and his untimely death cast a gloom over our entire household. No one has yet been appointed to fill his place.

In July last, Dr. J. J. Crane, who had been with us four years and a half, felt himself compelled, by failing health, to retire from our medical staff and return to his home in New York. His resignation was accepted with great reluctance. His unswerving fidelity to duty and his kind and genial disposition had endeared him to all, and his departure from our midst occasioned general regret.

Dr. Allen Fitch, of Ward's Island Hospital, New York, and a graduate of the New York University, was appointed his successor.

Dr. William G. Stone still continues in the conscientious performance of his often arduous duties.

Mrs. F. M. Porter has filled the office of matron since the opening of the institution, and her faithful service during a period of nearly eleven years merits special recognition.

I desire also to acknowledge my appreciation of the services of Mr. Charles H. Woodruff, who, for many years, has been the efficient clerk of the institution.

To the supervisors and other officers, attendants and employees, who, by conscientious attention to duty have evidenced their interest in the welfare of the hospital and its inmates, I feel under many obligations.

In conclusion, I have to thank you, gentlemen of the board, for the confidence you have ever reposed in me, for your counsels and hearty co-operation in plans for the increase of the usefulness and prosperity of the hospital.

That a constantly widening stream of benefits may flow to suffering humanity from this institution is my earnest desire.

Respectfully submitted,

EDWIN A. KILBOURNE, M. D.,

Superintendent.

ELGIN, Illinois, *October 1, 1882.*

TABLES

ACCOMPANYING THE MEDICAL SUPERINTENDENT'S REPORT.

TABLE I.

MOVEMENT OF POPULATION.

MOVEMENT.	1881.			1882.			1881-2.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
Present at beginning of each period.	267	258	525	258	249	507	267	258	525
Admitted.....	80	81	161	81	76	157	161	157	318
Total number treated.....	347	339	686	339	325	664	428	415	843
Discharged—									
Recovered.....	23	16	39	23	18	41	46	34	80
Much improved.....	17	15	32	16	10	26	33	25	58
Improved.....	10	21	31	8	13	21	18	34	52
Stationary.....	24	20	44	24	12	36	48	32	80
Died.....	14	18	32	7	11	18	21	29	50
Not insane.....	1	.....	1	1	1	2	2	1	3
Total number discharged.....	89	90	179	79	65	144	168	155	323
Remaining September 30.....	258	249	507	260	260	520	260	260	520
Averages.....	263.78	258.61	522.39	260.61	258.47	519.08	262.19	258.54	520.73

TABLE II.

NUMBER OF EACH AGE, WHEN ADMITTED AND WHEN ATTACKED.

AGE.	When admitted.			When attacked.		
	M.	F.	T.	M.	F.	T.
Under fifteen.....	1	2	3	3	2	5
Fifteen to twenty.....	9	10	19	10	16	26
Twenty to twenty-five.....	25	24	49	23	26	49
Twenty-five to thirty.....	23	24	47	15	25	40
Thirty to thirty-five.....	28	25	53	20	20	40
Thirty-five to forty.....	26	21	47	20	19	39
Forty to forty-five.....	19	14	33	13	12	25
Forty-five to fifty.....	6	14	20	6	8	14
Fifty to sixty.....	16	15	31	9	11	20
Sixty to seventy.....	4	4	8	4	2	6
Seventy to eighty.....	.....	2	2	1	1	2
Eighty to ninety.....	2	1	3	1	.....	1
Unknown.....	.....	.....	.....	34	14	48
Not insane.....	2	1	3	2	1	3
Total.....	161	157	318	161	157	318

TABLE III.

NATIVITY OF THOSE ADMITTED.

BIRTHPLACE.	M.	F.	T.	BIRTHPLACE.	M.	F.	T.
United States.....	2	3	5	<i>Brought forward</i>	64	70	134
Alabama.....	1	1	2	Canada.....	6	7	13
Connecticut.....	—	2	2	New Brunswick.....	1	—	1
Illinois.....	36	37	73	England.....	7	4	11
Indiana.....	—	4	4	Ireland.....	18	17	35
Iowa.....	1	—	1	Scotland.....	1	2	3
Maine.....	—	1	1	Isle of Man.....	—	1	1
Massachusetts.....	—	3	3	Sweden.....	8	12	20
Michigan.....	2	2	4	Norway.....	4	2	6
Ohio.....	4	5	9	Denmark.....	1	—	1
Pennsylvania.....	12	4	16	Holland.....	1	—	1
Rhode Island.....	1	2	3	Germany.....	19	14	33
Tennessee.....	1	1	2	Prussia.....	2	1	3
Vermont.....	1	4	5	Bohemia.....	6	3	9
Virginia.....	1	—	1	Unknown.....	1	1	2
Wisconsin.....	2	1	3	Not insane.....	2	1	3
Totals, native.....	64	70	134	Totals.....	161	157	318

TABLE IV.

RESIDENCE OF THOSE ADMITTED.

COUNTIES.	M.	F.	T.	COUNTIES.	M.	F.	T.
Boone.....	3	1	4	Kendall.....	—	4	4
Bureau.....	3	1	4	Lake.....	7	1	8
Carroll.....	5	—	5	LaSalle.....	14	7	21
Cook.....	82	71	153	Lee.....	2	3	5
DeKalb.....	4	15	19	McHenry.....	5	5	10
DuPage.....	2	6	8	Ogle.....	6	4	10
Henry.....	—	1	1	Stephenson.....	7	4	11
Jo Daviess.....	3	2	5	Whiteside.....	4	7	11
Kane.....	11	11	22	Winnebago.....	3	10	13
Kankakee.....	—	4	4	Total.....	161	157	318
Cities of more than 5,000 inhabitants.....	103	87	190				
County districts.....	56	69	125				
Not insane.....	2	1	3				
Total.....	161	157	318				

TABLE V.

CIVIL CONDITION OF THOSE ADMITTED.

CIVIL CONDITION.	Male.	Female.	Total.
Single.....	81	54	135
Married.....	71	80	151
Widowed.....	3	11	14
Divorced.....	1	8	9
Unknown.....	3	3	6
Not insane.....	2	1	3
Totals.....	161	157	318

TABLE VI.

OCCUPATION OF THOSE ADMITTED.

Occupation.	M.	F.	T.
Farmers and their wives	35	22	57
Farmers' sons and daughters	1	4	5
Laborers and their wives	28	12	40
Domestics		23	23
Housewives		16	16
Seamstresses		2	2
Carpenters and their wives	7	4	11
Carpenters' daughters		2	2
Shoemakers and their wives	2	1	3
Blacksmiths and their wives	3	2	5
Painters and their wives	1	2	3
Painters' daughters		1	1
Car varnishers	1		1
Tailors	3		3
Tailors' daughters		1	1
Tailoresses		2	2
Clerks	9		9
Traveling salesmen and their wives	2	1	3
Telegraph operators	1	1	2
Book-keepers	1		1
Stenographers	1		1
Musicians	2		2
School-teachers	1	3	4
School-boys and girls	2	4	6
Attorneys and their wives	1	3	4
Lawyers and editors	2		2
Card-writers	2		2
Merchants and their wives	4	2	6
Merchants' daughters		2	2
Teamsters and their wives	3	2	5
Railroad employees and their wives	1	2	3
Millers	2		2
Dealers in coal, stock, etc., and their wives	1	1	2
Butchers and their wives	1	1	2
Butchers' daughters		1	1
Grocers' wives		4	4
Milliners		2	2
Dress-makers		3	3
Shirt-makers		1	1
Jewelers	1		1
Braiziers	1		1
Insurance agents	1		1
Insurance brokers	1		1
Marine engineers	1		1
Civil engineers	1		1
Wheelwrights	1		1
Superintendents of mines	1		1
Miners	2		2
Tanners	2		2
Tanners' daughters		1	1
Bakers	1		1
Gardeners	3		3
Furniture designers	1		1
Sign engravers	1		1
Pocket-book makers	1		1
Wagon-makers	1		1
Boiler-makers	1		1
Harness-makers' wives		4	4
Iron-moulders and their wives	1	2	3
Printers and their wives	1	1	2
Workers in worsteds		1	1
Watch-factory operatives		1	1
Paper-mill operatives	1		1
Coopers	1		1
Stone-cutters	1		1
Stone-masons' wives		1	1
Coachmen	1		1
Rag-pickers	1		1
Taxidermists	1		1
Chiropodists	1		1
Liquor-dealers	1		1
Saloon-keepers' wives		1	1
Bar-tenders	1		1
Music-teachers		1	1
Ministers' wives		1	1
Real-estate agents' wives		1	1

Table VI.—*Concluded.*

Photographers' wives.....	.....	1	1
Hotel-keepers' wives.....	.....	1	1
Confectioners' wives.....	.....	1	1
Locksmiths' wives.....	.....	1	1
Street-car conductors' wives.....	.....	1	1
Physicians' daughters.....	.....	1	1
Bankers' daughters.....	.....	1	1
Watchmens' daughters.....	.....	1	1
No occupation.....	3	1	4
Unknown.....	7	5	12
Not insane.....	2	1	3
Total.....	161	157	318

TABLE VII.
MANNER OF COMMITMENT.

How COMMITTED.	M.	F.	T.
By verdict of a jury.....	152	156	308
By certificate of penitentiary physician.....	5	1	6
By mittimus.....	4	.....	4
Totals.....	161	157	318

TABLE VIII.
HOW SUPPORTED.

How SUPPORTED.	M.	F.	T.
By state.....	260	260	520
Totals.....	260	260	520

TABLE IX.
FORM OF DISEASE IN THOSE ADMITTED.

FORM OF DISEASE.	M.	F.	T.
Mania.....	41	20	61
Mania, acute.....	20	21	41
Mania, sub-acute.....	6	.....	6
Mania, chronic.....	38	55	93
Mania, periodic.....	.....	2	2
Mania, recurrent.....	6	11	17
Mania, syphilitic.....	3	.....	3
Mania, puerperal.....	.....	4	4
Mania, climacteric.....	.....	1	1
Melancholia.....	25	27	52
Melancholia, acute.....	2	2	4
Epileptic mania.....	4	1	5
Dipsomania.....	3	.....	3
Methomania.....	1	2	3
Erotomania.....	.....	1	1
General paralysis.....	5	.....	5
Dementia.....	1	5	6
Dementia, secondary.....	1	.....	1
Dementia, senile.....	1	.....	1
Imbecility.....	2	4	6
Not insane.....	2	1	3
Totals.....	161	157	318

TABLE X.

COMPLICATIONS IN THOSE ADMITTED.

COMPLICATIONS.	M.	F.	T.
Phthisis pulmonalis.....	-----	2	2
Hysteria.....	-----	2	2
Syphilis.....	4	1	5
Aphasia.....	-----	1	1
Utero-genital disorders.....	-----	6	6
Incontinence of urine.....	1	-----	1
Vesico-vaginal fistula.....	-----	1	1
Gonorrhœa.....	1	-----	1
Dyspepsia.....	1	-----	1
Asthma.....	2	1	3
Enteritis.....	-----	1	1
Phlegmonous erysipelas.....	-----	1	1
Valvular lesion of heart and carcinoma of stomach.....	-----	1	1
Kyphosis.....	-----	1	1
Chronic conjunctivitis.....	-----	1	1
Chronic eczema and cystitis.....	1	-----	1
Congelation of feet.....	1	-----	1
Strumous diathesis.....	-----	2	2
Mutism.....	-----	1	1
Totals.....	11	22	33

Of 161 male patients received, nine were suicidal, one homicidal.
Of 157 female patients received, eleven were suicidal, one homicidal.

TABLE XI.

HEREDITARY TRANSMISSION IN THOSE ADMITTED.

RELATIVES INSANE, ETC.	M.	F.	T.
Father insane.....	1	3	4
Mother insane.....	2	6	8
Father and mother insane.....	1	-----	1
Father and paternal near relatives insane.....	1	-----	1
Mother and maternal near relatives insane.....	-----	4	4
Paternal near relatives insane.....	9	4	13
Maternal near relatives insane.....	8	7	15
Paternal and maternal near relatives insane.....	1	-----	1
Brothers or sisters insane.....	8	12	20
Brothers or sisters and father or mother insane.....	2	4	6
Brothers or sisters and paternal or maternal near relatives insane.....	1	3	4
Father, sister and paternal or maternal near relatives insane.....	1	1	2
Other near relatives insane.....	1	3	4
Epileptic near relatives.....	1	-----	1
Apoplectic or paralytic near relatives.....	1	1	2
Parents first cousins.....	1	1	2
Totals.....	39	49	88

TABLE XII.

NUMBER OF ATTACK IN THOSE ADMITTED.

NUMBER OF ATTACK.	M.	F.	T.
First.....	112	122	234
Second.....	12	18	30
Third.....	1	1	2
Fourth.....	-----	2	2
Several.....	3	3	6
Unknown.....	31	10	41
Not insane.....	2	1	3
Totals.....	161	157	318

TABLE XIII.

EXCITING CAUSE OF DISEASE IN THOSE ADMITTED.

ASSUMED OR APPARENT CAUSES.	M.	F.	T.
<i>Moral Causes.</i>			
Business trouble and over anxiety.....	3	1	4
Domestic trouble and loss.....	3	13	16
Disappointment in love.....	4	6	10
Religious anxiety or excitement.....	5	3	8
Mental overwork.....	5	-----	5
Spiritualism.....	1	-----	1
Jealousy.....	3	-----	3
Loss of property.....	1	3	4
Bereavement and religious excitement.....	1	-----	1
Disappointment in musical aspirations.....	-----	1	1
<i>Moral and Physical Causes.</i>			
Ill health and anxiety.....	1	1	2
Ill health and domestic trouble.....	-----	2	2
Hereditary transmission.....	3	11	14
Hereditary transmission and ill health.....	1	3	4
Hereditary transmission and bereavement.....	-----	1	1
Overwork and anxiety.....	3	3	6
Onanism.....	9	-----	9
Intemperance.....	7	1	8
Intemperance and domestic trouble.....	-----	1	1
Intemperance and exposure.....	1	-----	1
Intemperance and religious excitement.....	1	-----	1
Excessive venery.....	2	-----	2
Utero-genital disorders.....	-----	2	2
Abusive treatment and child-birth.....	-----	1	1
Bereavement and child-birth.....	-----	1	1
Opium habit.....	1	2	3
<i>Physical Causes.</i>			
Ill health.....	-----	1	1
Ill health from uterine disease.....	-----	2	2
Ill health from lactation.....	-----	1	1
Ill health from menstrual derangements.....	-----	6	6
Ill health from climacteric.....	-----	1	1
Overwork and menstrual derangements.....	-----	2	2
Parturition.....	-----	21	21
Insolation.....	9	1	10
Injury of head.....	2	-----	2
Organic brain disease.....	2	2	4
Epilepsy.....	3	1	4
Meningitis.....	1	-----	1
Congenital defect.....	-----	2	2
Toxic causes.....	2	1	3
Hypochondria.....	1	-----	1
Intermittent fever.....	1	-----	1
Puberty.....	1	1	2
Shock from galvanic battery.....	1	-----	1
Syphilis.....	2	-----	2
Nervous shock from injury.....	1	-----	1
Overwork.....	1	2	3
Typhoid fever.....	1	1	2
Hysteria.....	-----	1	1
Emansio mensium.....	-----	1	1
Unknown.....	76	53	129
Not insane.....	2	1	3
Totals.....	161	157	318

XIV.

DURATION OF INSANITY IN THOSE ADMITTED.

DURATION.	M.	F.	T.
Less than one month.....	19	17	36
One to two months.....	12	13	25
Two to three months.....	11	11	22
Three to six months.....	18	20	38
Six to nine months.....	16	8	24
Nine to twelve months.....	1	5	6
Twelve to eighteen months.....	13	14	27
One and one-half to two years.....	2	5	7
Two to three years.....	8	11	19
Three to four years.....	7	10	17
Four to five years.....	3	5	8
Five to ten years.....	7	9	16
Ten to fifteen years.....	5	7	12
Fifteen to twenty years.....	1	5	6
Twenty to thirty years.....	2	1	3
Indefinite.....	8	9	17
Unknown.....	26	6	32
Not insane.....	2	1	3
Totals.....	161	157	318

TABLE XV.

AGE WHEN ATTACKED OF THOSE ADMITTED.

AGE.	M.	F.	T.
Under fifteen.....	.....	1	1
Fifteen to twenty.....	5	5	10
Twenty to twenty-five.....	10	4	14
Twenty-five to thirty.....	8	5	13
Thirty to thirty-five.....	2	8	10
Thirty-five to forty.....	8	4	12
Forty to forty-five.....	5	5	10
Forty-five to fifty.....	4	1	5
Fifty to sixty.....	4	1	5
Totals.....	46	34	80

TABLE XVI.

NUMBER OF ATTACK IN THOSE RECOVERED.

NUMBER OF ATTACK.	M.	F.	T.
First.....	36	24	60
Second.....	5	5	10
Third.....	1	1	2
Fourth.....	.....	2	2
Several attacks.....	.....	1	1
Unknown.....	4	1	5
Totals.....	46	34	80

TABLE XVII.

DURATION OF DISEASE BEFORE TREATMENT IN THOSE RECOVERED.

DURATION BEFORE TREATMENT.	Number.			Per cent. recovered after each period of duration.		
	Male.	Female.	Total.	Male.	Female.	Total.
Under one month.....	13	9	22	68.4	52.9	61.1
One to two months.....	5	5	10	41.6	38.4	40
Two to three months.....	2	4	6	18.1	36.3	27.2
Three to six months.....	8	7	15	44.4	35	39.4
Six to nine months.....	5	2	7	31.2	25	29.1
Nine to twelve months.....	1	3	4	100	60	66.6
Two to three years.....	1	-----	1	12.5	-----	12.5
Indefinite.....	4	2	6	-----	-----	-----
Unknown.....	7	2	9	-----	-----	-----
Totals.....	46	34	80	28.5	21.6	25.1

TABLE XVIII.

DURATION OF TREATMENT IN THOSE RECOVERED.

DURATION OF TREATMENT.	Male.	Female.	Total.
One to two months.....	4	4	8
Two to three months.....	5	2	7
Three to six months.....	7	11	18
Six to nine months.....	10	4	14
Nine to twelve months.....	10	4	14
Twelve to eighteen months.....	4	1	5
One and one-half to two years.....	1	3	4
Two to three years.....	-----	3	3
Three to four years.....	2	1	3
Four to five years.....	1	1	2
Five to six years.....	1	-----	1
Seven to eight years.....	1	-----	1
Totals.....	46	34	80
Average duration of treatment.....	12.59	11.22	11.90

TABLE XIX.

WHOLE DURATION OF TREATMENT IN THOSE RECOVERED.

DURATION BEFORE ADMISSION, AND RESIDENCE IN HOSPITAL.	Male.	Female.	Total.
One to two months.....	3	1	4
Two to three months.....	1	1	2
Three to six months.....	5	5	10
Six to nine months.....	5	7	12
Nine to twelve months.....	10	3	13
Twelve to eighteen months.....	5	7	12
One and a half to two years.....	3	1	4
Two to three years.....	-----	3	3
Three to four years.....	-----	1	1
Four to five years.....	1	1	2
Five to six years.....	2	-----	2
Indefinite.....	4	2	6
Unknown.....	7	2	9
Totals.....	46	34	80
Average whole duration.....	13.87	13.20	13.53

TABLE XX.

FORM OF DISEASE IN THOSE RECOVERED.

FORM OF DISEASE.	M.	F.	T.
Mania.....	3	1	4
Mania, acute.....	18	10	28
Mania, sub-acute.....	7	---	7
Mania, recurrent.....	3	7	10
Mania, puerperal.....	---	1	1
Melancholia.....	11	10	21
Melancholia, acute.....	---	2	2
Dipsomania.....	2	---	2
Methomania.....	1	2	3
Syphilitic mania.....	1	1	2
Totals.....	46	34	80

TABLE XXI.

SUPPOSED EXCITING CAUSE OF DISEASE IN THOSE RECOVERED.

ASSUMED OR APPARENT CAUSE.	M.	F.	T.
Intemperance.....	3	1	4
Heredity.....	1	2	3
Heredity and ill-health.....	1	1	2
Heredity and bereavement.....	---	1	1
Religious excitement.....	2	1	3
Religious excitement and intemperance.....	1	---	1
Parturition.....	---	5	5
Uterine disease.....	---	2	2
Puberty.....	---	1	1
Seduction.....	---	1	1
Over work and menstrual derangement.....	---	1	1
Ill-health and domestic trouble.....	---	2	2
Domestic trouble or loss.....	1	---	1
Bereavement and child-birth.....	---	1	1
Bereavement and religious excitement.....	1	---	1
Disappointment in love.....	1	1	2
Anxiety and over-work.....	2	---	2
Mental over-work.....	2	---	2
Menstrual derangement.....	---	2	2
Nervous shock from injury.....	1	---	1
Syphilis.....	2	1	3
Opium habit.....	1	2	3
Vaccination.....	---	1	1
Insolation.....	2	---	2
Excessive venery.....	2	---	2
Onanism.....	4	---	4
Unknown.....	19	8	27
Totals.....	46	34	80

TABLE XXII.
NATIVITY OF THOSE RECOVERED.

NATIVITY.	M.	F.	T.
Illinois.....	12	8	20
New York.....	2	3	5
Pennsylvania.....	4	1	5
Ohio.....	3	2	5
Massachusetts.....	2	.....	2
Rhode Island.....	1	1	2
Vermont.....	1	.....	1
Maine.....	1	1	2
Connecticut.....	.....	1	1
New Jersey.....	.....	2	2
Michigan.....	1	1	2
Wisconsin.....	1	1	2
Virginia.....	.....	1	1
West Virginia.....	1	.....	1
Alabama.....	1	.....	1
United States.....	.....	1	1
Canada.....	2	.....	2
England.....	1	2	3
Ireland.....	6	3	9
Germany.....	7	.....	7
Sweden.....	.....	5	5
East India.....	.....	1	1
Totals.....	46	34	80

TABLE XXIII.
DEATHS AND CAUSES.

CAUSES OF DEATH.	M.	F.	T.
Exhaustion of mania and refusal of food.....	.....	1	1
Exhaustion of mania, chronic.....	2	1	3
Exhaustion of mania, chronic, with apoplexy.....	4	2	6
Exhaustion of mania, chronic, with diarrhœa and epistaxis.....	1	.....	1
Exhaustion of mania, chronic, with paralysis.....	.....	1	1
Exhaustion of mania, chronic, with carcinoma of stomach and paralysis of heart.....	.....	1	1
Exhaustion of mania, chronic, with pulmonary hemorrhage.....	.....	1	1
Exhaustion of mania, chronic, with pneumonia.....	.....	2	2
Exhaustion of mania, acute.....	1	1	2
Exhaustion of mania, acute, with carcinoma of breast.....	.....	1	1
Exhaustion of mania, acute, with diarrhœa.....	.....	1	1
Exhaustion of dementia.....	.....	1	1
Exhaustion of dementia, with nephritis.....	.....	1	1
Exhaustion of dementia, with caries of inferior maxilla.....	1	.....	1
Exhaustion of dementia, with enteritis.....	1	.....	1
Melancholia, terminating in suicide.....	1	.....	1
Melancholia, with paralysis.....	1	.....	1
Melancholia, with ordema of lungs.....	.....	1	1
Melancholia, with enteritis.....	1	.....	1
Melancholia, with dysentery.....	.....	1	1
Marasmus of melancholia.....	2	2	4
Status epilepticus.....	2	1	3
Phthisis pulmonalis.....	2	6	8
Pneumonia.....	1	.....	1
Carcinoma of stomach.....	.....	1	1
Meningitis, acute.....	.....	1	1
Cerebro-spinal meningitis.....	.....	1	1
General paresis.....	1	.....	1
Typho-malarial fever.....	.....	1	1
Total.....	21	29	50

TABLE XXIV.

AGES AT DEATH.

AGE.	M.	F.	T.
Twenty to twenty-five years.....		3	3
Twenty-five to thirty years.....	1	6	7
Thirty to thirty-five years.....	2	5	7
Thirty-five to forty years.....	5	4	9
Forty to forty-five years.....	5	3	8
Forty-five to fifty years.....	3	1	4
Fifty to sixty years.....	4	5	9
Sixty to seventy years.....	1	2	3
Totals.....	21	29	50

TABLE XXV.

RATIO OF DEATHS.

RATIO PER CENT.	M.	F.	T.
On those admitted in two years.....	13.0	18.4	15.7
On all under treatment in two years.....	4.9	6.9	5.9
On average number present during two years.....	8.0	11.2	9.6

TABLE XXVI.

DURATION OF DISEASE IN THOSE WHO DIED.

DURATION.	M.	F.	T.
One to two months.....		1	1
Two to three months.....		1	1
Three to six months.....		4	4
Six to nine months.....		1	1
Nine to twelve months.....	1		1
Twelve to eighteen months.....	3	1	4
One and one-half to two years.....	2		2
Two to three years.....	3	4	7
Three to four years.....	1	3	4
Four to five years.....	1	2	3
Five to ten years.....	5	5	10
Ten to fifteen years.....	3	4	7
Fifteen to twenty years.....	1	1	2
Twenty to thirty years.....		1	1
Unknown.....	1	1	2
Totals.....	21	29	50

TABLE XXVII.

DURATION OF DISEASE IN THOSE REMAINING.

DURATION.	M.	F.	T.
Less than one month.....	1	-----	1
Two to three months.....	3	3	6
Three to six months.....	10	7	17
Six to twelve months.....	11	9	20
Twelve to eighteen months.....	14	11	25
One and one-half to two years.....	8	8	16
Two to three years.....	13	21	34
Three to five years.....	31	39	70
Five to ten years.....	59	72	131
Ten to fifteen years.....	33	36	69
Fifteen to twenty years.....	10	16	26
Twenty to twenty-five years.....	4	5	9
Twenty-five to thirty years.....	3	1	4
Thirty to forty years.....	1	3	4
Forty to fifty years.....	1	1	2
Indefinite.....	12	12	24
Unknown.....	46	16	62
Totals.....	260	260	520

TABLE XXVIII.

AGES OF THOSE REMAINING IN THE HOSPITAL.

AGE.	M.	F.	T.
Under fifteen years.....	1	1	2
Fifteen to twenty years.....	-----	4	4
Twenty to twenty-five years.....	16	17	33
Twenty-five to thirty years.....	42	33	75
Thirty to thirty-five years.....	48	35	83
Thirty-five to forty years.....	48	44	92
Forty to forty-five years.....	38	35	73
Forty-five to fifty years.....	21	27	48
Fifty to sixty years.....	31	39	70
Sixty to seventy years.....	13	21	34
Seventy to eighty years.....	1	3	4
Eighty to ninety years.....	1	1	2
Totals.....	260	260	520

FINANCIAL STATEMENT

Of the Receipts and Expenditures of the Illinois Northern Hospital for the Insane, for the fiscal year, from October 1, 1880, to September 30, 1881.

ORDINARY EXPENSES.			
<i>Dr.</i>			
1880.			
October	1	To balance.....	7,011 40
	1	“ appropriation for quarter ending December 31.....	25,000 00
1881.			
January	1	“ appropriation for quarter ending March 31.....	25,000 00
April	1	“ appropriation for quarter ending June 30.....	25,000 00
July	1	“ appropriation for quarter ending September 30.....	24,500 00
September	30	“ counties, for clothing.....	6,801 80
		“ individuals, for clothing.....	2,022 74
		“ sales of live stock.....	153 00
		“ sales of farm produce.....	3 40
		“ bequests and donations.....	42 00
		“ sales of waste materials, of all sorts.....	62 49
		“ all other sources.....	2,714 48
<i>Cr.</i>			
1881.			
September	30	By indebtedness incurred on account of—	
		Attendance (salaries and wages).....	36,564 49
		Food.....	28,279 99
		Clothing, bedding, etc.....	8,115 52
		Laundry supplies.....	1,694 17
		Fuel.....	18,420 94
		Light.....	2,201 14
		Medicines and medical supplies.....	3,099 51
		Freight and transportation.....	6,023 79
		Postage and telegraphing.....	616 66
		Books and stationery.....	279 87
		Printing and advertising.....	615 50
		Music and amusements.....	295 55
		Instruments and apparatus.....	77 66
		Household expenses.....	1,295 16
		Furniture.....	1,419 82
		Buildings, improvements and repairs.....	3,215 21
		Tools.....	159 95
		Machinery, etc.....	372 43
		Farm, garden, stock, grounds, roads and fences..	2,765 26
		Real estate.....	221 00
		Legal expenses.....	1,057 62
		Insurance.....	100 00
		Shop expenses.....	4 65
		Burial expenses.....	209 00
		Expenses not classified.....	442 77
		By balance.....	763 65
			\$118,311 31
			\$118,311 31
1881.			
October	1	To balance (in hands of W. H. Wing, treasurer,) \$2,692 64	
		Less bills outstanding.....	1,928 99
			763 65
INCOME FROM BURR BEQUEST.			
<i>Dr.</i>			
1880.			
October	1	To balance.....	1,413 58
	2	“ interest on bonds.....	280 00
1881.			
August	16	“ interest on bonds.....	480 00
<i>Cr.</i>			
1881.			
September	30	By balance (in hands of W. H. Wing, treasurer,).....	2,173 58
			\$2,173 58
			\$2,173 58
1881.			
October	1	To balance.....	2,173 58

Financial Statement—Continued.

		IMPROVEMENTS AND REPAIRS.			
		<i>Dr.</i>			
1880.	October	1	To balance.....	3,493 24	
1881.	July	1	“ appropriation.....	5,000 00	
		<i>Cr.</i>			
1881.	September	30	By indebtedness incurred on account of—		
			Attendance.....		1,559 02
			Light.....		4 00
			Freight and transportation.....		155 40
			Furniture.....		46 50
			Buildings, improvements and repairs.....		3,602 92
			Tools.....		34 01
			Machinery and fixtures.....		3 00
			By balance (in state treasury, undrawn).....		3,088 39
				<u>\$8,493 24</u>	<u>\$8,493 24</u>
1881.	October	1	To balance.....	3,088 39	
		IMPROVEMENT OF GROUNDS.			
		<i>Dr.</i>			
1880.	October	1	To balance.....	351 25	
1881.	July	1	“ appropriation.....	1,000 00	
		<i>Cr.</i>			
1881.	September	30	By indebtedness incurred on account of—		
			Attendance.....		296 83
			Freight and transportation.....		40 00
			Buildings, improvements and repairs.....		103 05
			By balance (in state treasury, undrawn).....		911 37
				<u>\$1,351 25</u>	<u>\$1,351 25</u>
1881.	October	1	To balance.....	911 37	
		GALLERY IN AMUSEMENT HALL.			
		<i>Dr.</i>			
1880.	October	1	To balance.....	285 50	
		<i>Cr.</i>			
1881.	September	30	By indebtedness incurred on account of—		
			Buildings, improvements and repairs.....		285 50
				<u>\$285 50</u>	<u>\$285 50</u>
		ENGINE WITH FOUNDATIONS.			
		<i>Dr.</i>			
1880.	October	1	To balance.....	1,600 00	
		<i>Cr.</i>			
1881.	September	30	By indebtedness incurred on account of—		
			Machinery, etc.....		1,600 00
				<u>\$1,600 00</u>	<u>\$1,600 00</u>

Financial Statement—Continued.

		MACHINERY FOR CARPENTER-SHOP.			
		<i>Dr.</i>			
1880.	October	1	To balance.....	116 61	
		<i>Cr.</i>			
1881.	September	30	By indebtedness incurred on account of—		
			Tools.....		15 81
			Machinery, etc.....		100 80
				<u>\$116 61</u>	<u>\$116 61</u>
		ICE-HOUSE.			
		<i>Dr.</i>			
1881.	July	1	To appropriation.....	1,000 00	
		<i>Cr.</i>			
1881.	September	30	By indebtedness incurred on account of—		
			Buildings, improvements and repairs.....		660 75
			To balance (in state treasury, undrawn).....		339 25
				<u>\$1,000 00</u>	<u>\$1,000 00</u>
1881.	October	1	To balance.....	339 25	
		NEW BOILERS.			
		<i>Dr.</i>			
1881.	July	1	To appropriation.....	10,000 00	
		<i>Cr.</i>			
1881.	September	30	By indebtedness incurred on account of—		
			Buildings, improvements and repairs.....		5,750 00
			By balance (in state treasury undrawn).....		4,250 00
				<u>\$10,000 00</u>	<u>\$10,000 00</u>
1881.	October	1	To balance.....	4,250 00	
		NEW SMOKE-STACK.			
		<i>Dr.</i>			
1881.	July	1	To appropriation.....	3,500 00	
		<i>Cr.</i>			
1881.	September	30	By indebtedness incurred on account of—		
			Buildings, improvements and repairs.....		3,203 50
			By balance (in state treasury, undrawn).....		296 50
				<u>\$3,500 00</u>	<u>\$3,500 00</u>
1881.	October	1	To balance.....	296 50	
		HEATER AND PURIFIER.			
		<i>Dr.</i>			
1881.	July	1	To appropriation.....	1,100 00	
		<i>Cr.</i>			
1881.	September	30	By balance (in state treasury, undrawn).....		1,100 00
				<u>\$1,100 00</u>	<u>\$1,100 00</u>
1881.	October	1	To balance.....	1,100 00	

Financial Statement—Continued.

		ADDITIONAL POWER TO ENGINE, ETC.			
		<i>Dr.</i>			
July	1881.	1	To appropriation.....	2,500 00	
		<i>Cr.</i>			
September	1881.	30	To balance (in state treasury, undrawn).....		2,500 00
				<u>\$2,500 00</u>	<u>\$2,500 00</u>
October	1881.	1	To balance.....	2,500 00	
		NEW FAN.			
		<i>Dr.</i>			
July	1881.	1	To appropriation.....	1,250 00	
		<i>Cr.</i>			
September	1881.	30	By balance (in state treasury, undrawn).....		1,250 00
				<u>\$1,250 00</u>	<u>\$1,250 00</u>
October	1881.	1	To balance.....	1,250 00	
		DROP FLUES.			
		<i>Dr.</i>			
July	1881.	1	To appropriation.....	800 00	
		<i>Cr.</i>			
September	1881.	30	By indebtedness incurred on account of— Buildings, improvements and repairs.....		400 00
					400 00
				<u>\$800 00</u>	<u>\$800 00</u>
October	1881.	1	To balance.....	400 00	
		SEWER AND AIR-DUCTS.			
		<i>Dr.</i>			
July	1881.	1	To appropriation.....	500 00	
		<i>Cr.</i>			
September	1881.	30	By balance (in state treasury, undrawn).....		500 00
				<u>\$500 00</u>	<u>\$500 00</u>
October	1881.	1	To balance.....	500 00	
		PUMP.			
		<i>Dr.</i>			
July	1881.	1	To appropriation.....	1,000 00	
		<i>Cr.</i>			
September	1881.	30	By balance (in state treasury, undrawn).....		1,000 00
				<u>\$1,000 00</u>	<u>\$1,000 00</u>
October	1881.	1	To balance.....	1,000 00	

Financial Statement—Concluded.

		RADIATORS.			
		<i>Dr.</i>			
July	1881.	1	To appropriation.....	4,000 00	
		<i>Cr.</i>			
September	1881.	30	By indebtedness incurred on account of—		
			Buildings, repairs, etc.....		3,000 00
			By balance (in state treasury, undrawn).....		1,000 00
				\$4,000 00	\$4,000 00
October	1881.	1	To balance.....	1,000 00	
		ARTESIAN WELL.			
		<i>Dr.</i>			
July	1881.	1	To appropriation.....	5,000 00	
		<i>Cr.</i>			
September	1881.	30	By balance (in state treasury, undrawn).....		5,000 00
				\$5,000 00	\$5,000 00
October	1881.	1	To balance.....	5,000 00	
		ENGINE AND PUMP-HOUSE.			
		<i>Dr.</i>			
July	1881.	1	To appropriation	4,450 00	
		<i>Cr.</i>			
September	1881.	30	By indebtedness incurred on account of—		
			Attendance.....		410 87
			Fuel.....		2 57
			Freight and transportation.....		194 49
			Buildings, improvements and repairs.....		1,085 43
			By balance (in state treasury, undrawn).....		2,756 64
				\$4,450 00	\$4,450 00
October	1881.	1	To balance.....	2,756 64	
		COVERING STEAM-PIPES.			
		<i>Dr.</i>			
July	1881.	1	To appropriation.....	2,885 00	
		<i>Cr.</i>			
September	1881.	30	By balance (in state treasury, undrawn).....		2,885 00
				\$2,885 00	\$2,885 00
October	1881.	1	To balance.....	2,885 00	
		TRANSFER OF PATIENTS.			
		<i>Dr.</i>			
September	1881.	30	By indebtedness incurred on account of—		
			Freight and transportation		245 00
		<i>Cr.</i>			
September	1881.	30	To balance (in state treasury, undrawn).....	\$245 07	
				\$245 07	\$245 07
October	1881.	1	By balance.....		245 07

FINANCIAL STATEMENT

Of the Receipts and Expenditures of the Illinois Northern Hospital for the Insane, for the fiscal year, from October 1, 1881, to September 30, 1882.

ORDINARY EXPENSES.			
<i>Dr.</i>			
1881.	1	To balance.....	763 65
October	1	" appropriation for quarter ending December 31.....	24,500 00
1882.			
January	1	" appropriation for quarter ending March 31.....	24,500 00
April	1	" appropriation for quarter ending June 30.....	24,500 00
July	1	" appropriation for quarter ending September 30....	25,500 00
September	30	" counties. for clothing.....	5,707 28
"	30	" individuals, for clothing.....	2,773 68
"	30	" sales of live stock.....	34 00
"	30	" sales of farm produce.....	12 83
"	30	" sales of waste materials, of all sorts.....	58 82
"	30	" all other sources.....	2,416 66
<i>Cr.</i>			
1882.	30	By indebtedness incurred on account of—	
September		Attendance (salaries and wages).....	35,965 49
		Food.....	32,485 60
		Clothing, bedding, etc.....	6,807 20
		Laundry supplies.....	540 07
		Fuel.....	18,643 08
		Light.....	2,283 11
		Medicines and medical supplies.....	1,669 04
		Freight and transportation.....	3,632 97
		Postage and telegraphing.....	397 38
		Books and stationery.....	171 15
		Printing and advertising.....	327 02
		Music and amusements.....	210 05
		Instruments and apparatus.....	19 50
		Household expenses.....	890 81
		Furniture.....	538 79
		Buildings, improvements and repairs.....	1,205 16
		Tools.....	40 85
		Machinery, etc.....	115 19
		Farm, garden, stock, grounds, roads and fences... ..	3,482 86
		Legal expenses.....	69 18
		Insurance.....	100 00
		Burial expenses.....	108 00
		Expenses not classified.....	379 21
		By balance.....	685 21
			<u>\$110,766 92</u>
1882.	1	To balance (in hands of W. H. Wing, treasurer).....	\$2,561 71
October		Less bills outstanding.....	1,876 50
			<u>685 21</u>

Financial Statement—Continued.

		INCOME FROM BURR BEQUEST.			
		<i>Dr.</i>			
1881.					
October	1	To balance.....	2,173 58		
November	29	“ rent, from Gardener	1,000 00		
December	12	“ interest, from Bryan.....	400 00		
“	22	“ rent, from Gardener	100 00		
1882.					
January	19	“ rent, from Gardener	100 00		
January	31	“ interest on bonds.....	240 00		
February	27	“ rent, from Gardener	100 00		
March	7	“ to interest, from Bishop.....	90 00		
March	11	“ interest, from Bryan.....	210 00		
March	31	“ interest, from Bryan.....	100 00		
May	10	“ interest.....	248 50		
July	24	“ interest on bonds.....	240 00		
August	15	“ rent, from Gardener	200 00		
September	13	“ interest.....	400 00		
		<i>Cr.</i>			
1882.					
September	30	By indebtedness, incurred on account of—			
		Music and amusements			384 25
		Balance (in hands of W. H. Wing, treasurer).....			5,217 83
			\$5,602 08		\$5,602 08
1882.					
October	1	To balance.....	5,217 83		
		IMPROVEMENTS AND REPAIRS.			
		<i>Dr.</i>			
1881.					
October	1	To balance.....	3,088 39		
1882.					
July	1	“ appropriation.....	5,000 00		
		<i>Cr.</i>			
1882.					
September	30	By indebtedness incurred on account of—			
		Attendance			1,399 98
		Freight and transportation.....			46 44
		Buildings, improvements and repairs.....			3,767 06
		Tools			8 95
		Machinery, etc.....			357 95
		By balance (in state treasury, undrawn).....			2,508 01
			\$8,088 39		\$8,088 39
1882.					
October	1	To balance.....	2,508 01		
		IMPROVEMENT OF GROUNDS.			
		<i>Dr.</i>			
1881.					
October	1	To balance.....	911 37		
1882.					
July	1	“ appropriation.....	1,000 00		
		<i>Cr.</i>			
1882.					
September	30	By indebtedness incurred on account of—			
		Attendance			354 00
		Freight and transportation.....			2 00
		Farm, garden, stock and grounds.....			81 00
		Expenses not classified.....			11 00
		By balance (in state treasury, undrawn)			1,463 37
			\$1,911 37		\$1,911 37
1882.					
October	1	To balance.....	1,463 37		

Financial Statement—Continued.

		ICE-HOUSE.			
		<i>Dr.</i>			
1881.	October 1	To balance.....	339 25		
		<i>Cr.</i>			
1882.	September 30	By balance, (in state treasury, undrawn).....		339 25	
			<u>\$339 25</u>	<u>\$339 25</u>	
1882.	October 1	To balance.....	339 25		
		NEW BOILERS.			
		<i>Dr.</i>			
1881.	October 1	To balance.....	4,250 00		
		<i>Cr.</i>			
1882.	September 30	By indebtedness incurred on account of— Buildings, improvements and repairs.....		4,250 00	
			<u>\$4,250 00</u>	<u>\$4,250 00</u>	
		NEW SMOKE STACK.			
		<i>Dr.</i>			
1881.	October 1	To balance.....	296 50		
		<i>Cr.</i>			
1882.	September 30	By indebtedness on account of— Buildings, improvements and repairs.....		296 50	
			<u>\$296 50</u>	<u>\$296 50</u>	
		HEATER AND PURIFIER.			
		<i>Dr.</i>			
1881.	October 1	To balance.....	1,100 00		
		<i>Cr.</i>			
1882.	September 30	By indebtedness incurred on account of— Machinery, etc.....		1,100 00	
			<u>\$1,100 00</u>	<u>\$1,100 00</u>	
		ADDITIONAL POWER TO ENGINE, ETC.			
		<i>Dr.</i>			
1881.	October 1	To balance.....	2,500 00		
		<i>Cr.</i>			
1882.	September 30	By indebtedness incurred on account of— Machinery, etc.....		1,953 82	
		Freight and transportation.....		75	
		By balance (in state treasury, undrawn).....		545 43	
			<u>\$2,500 00</u>	<u>\$2,500 00</u>	
1882.	October 1	To balance	\$545 43		

Financial Statement—Continued.

		NEW FAN.			
		<i>Dr.</i>			
1881.	October 1	To balance.....	1,250 00		
		<i>Cr.</i>			
1882.	September 30	By balance (in state treasury, undrawn).....		1,250 00	
			\$1,250 00		\$1,250 00
1882.	October 1	To balance.....	\$1,250 00		
		DROP FLUES.			
		<i>Dr.</i>			
1881.	October 1	To balance.....	400 00		
		<i>Cr.</i>			
1882.	September 30	By indebtedness, incurred on account of— Buildings, improvements and repairs.....		400 0	
			\$400 00		\$400 00
		SEWER AND AIR-DUCTS.			
		<i>Dr.</i>			
1881.	October 1	To balance.....	500 00		
		<i>Cr.</i>			
1882.	September 30	By indebtedness incurred on account of— Attendance		253 12	
		By balance (in state treasury, undrawn).....		246 88	
			\$500 00		\$500 00
1882.	October 1	To balance.....	246 88		
		PUMP.			
		<i>Dr.</i>			
1881.	October 1	To balance.....	1,000 00		
		<i>Cr.</i>			
1882.	September 30	By indebtedness incurred on account of— Machinery, etc.....		900 00	
		By balance (in state treasury undrawn).....		100 00	
			\$1,000 00		\$1,000 00
1882.	October 1	To balance.....	100 00		
		RADIATORS.			
		<i>Dr.</i>			
1881.	October 1	To balance.....	1,000 00		
		<i>Cr.</i>			
1882.	September 30	By indebtedness incurred on account of— Buildings, improvements and repairs.....		1,000 00	
			\$1,000 00		\$1,000 00

Financial Statement—Continued.

		ARTESIAN WELL.			
		<i>Dr.</i>			
1881.	October 1	To balance.....	5,000 00		
		<i>Cr.</i>			
1882.	September 30	By indebtedness incurred on account of—			
		Building, improvements and repairs.....		4,809 39	
		Expenses not classified.....		62 20	
		By balance (in state treasury, undrawn).....		128 41	
			<u>\$5,000 00</u>	<u>\$5,000 00</u>	
1882.	October 1	To balance.....	128 41		
		ENGINE AND PUMP HOUSE.			
		<i>Dr.</i>			
1881.	October 1	To balance.....	2,756 64		
		<i>Cr.</i>			
1882.	September 30	By indebtedness incurred on account of—			
		Attendance.....		343 45	
		Fuel.....		75	
		Freight and transportation.....		28 55	
		Buildings, improvements and repairs.....		2,339 89	
		By balance (in state treasury, undrawn).....		44 00	
			<u>\$2,756 64</u>	<u>\$2,756 64</u>	
1882.	October 1	To balance.....	\$44 00		
		COVERING STEAM PIPES.			
		<i>Dr.</i>			
1881.	October 1	To balance.....	2,885 00		
		<i>Cr.</i>			
1882.	September 30	By balance (in state treasury, undrawn).....		2,885 00	
			<u>\$2,885 00</u>	<u>\$2,885 00</u>	
1882.	October 1	To balance.....	\$2,885 00		
		TRANSFER OF PATIENTS.			
		<i>Dr.</i>			
1881.	November 17	To amount of appropriation.....	245 07		
		<i>Cr.</i>			
1882.	October 1	By balance (overdraft on W. H. Wing, treasurer).....		245 07	
			<u>\$245 07</u>	<u>\$245 07</u>	

TREASURER'S REPORT.

W. H. Wing, Treasurer, in account with the Illinois Northern Hospital
for the Insane, for the year ending September 30, 1881.

ORDINARY EXPENSES.			
Dr.			
1880.			
October	1	To balance on hand	18,940 39
October	1	" amount from state treasurer.....	25,000 00
1881.			
January	28	" amount from state treasurer.....	25,000 00
April	28	" amount from state treasurer.....	25,000 00
July	16	" amount from state treasurer.....	24,500 00
September	30	" sundry receipts and collections.....	11,799 91
Cr.			
1881.			
September	30	By superintendent's orders paid.....	117,522 94
		balance.....	2,717 36
		\$120,240 30	\$120,240 30
1881.			
October	1	To balance	2,717 36
NEW BOILERS.			
Dr.			
1881.			
September	6	To amount from state treasurer.....	1,750 00
Cr.			
1881.			
September	30	By superintendent's orders paid.....	1,750 00
		\$1,750 00	\$1,750 00
REPAIRS AND IMPROVEMENTS.			
Dr.			
1880.			
December	15	To amount from state treasurer.....	894 73
1881.			
January	28	To amount from state treasurer.....	196 22
February	19	" amount from state treasurer.....	375 00
March	16	" amount from state treasurer.....	355 98
April	30	" amount from state treasurer.....	220 00
May	6	" amount from state treasurer.....	65 00
June	20	" amount from state treasurer.....	1,386 31
August	16	" amount from state treasurer.....	635 63
September	6	" amount from state treasurer.....	431 24
Cr.			
1881.			
September	30	By superintendent's orders paid.....	4,560 11
		\$4,560 11	\$4,560 11
ICE-HOUSE.			
Dr.			
1881.			
August	16	To amount from state treasurer.....	660 75
Cr.			
1881.			
September	30	By superintendent's orders paid.....	660 75
		\$660 75	\$660 75

Treasurer's Report—Continued.

		NEW SMOKE-STACK.			
		<i>Dr.</i>			
1881.					
August	16	To amount from state treasurer.....	500 00		
September	6	" amount from state treasurer.....	2,303 50		
		<i>Cr.</i>			
1881.					
September	30	By superintendent's orders paid.....		2,303 50	
			<u>\$2,803 50</u>	<u>\$2,803 50</u>	
		NEW ENGINE AND PUMP-HOUSE.			
		<i>Dr.</i>			
1881.					
August	16	To amount from state treasurer.....	1,085 08		
September	6	" amount from state treasurer.....	608 28		
		<i>Cr.</i>			
1881.					
September	30	By superintendent's orders paid.....		1,693 36	
			<u>\$1,693 36</u>	<u>\$1,693 36</u>	
		MACHINERY FOR CARPENTER SHOP.			
		<i>Dr.</i>			
1881.					
June	20	To amount from state treasurer.....	116 61		
		<i>Cr.</i>			
1881.					
September	30	By superintendent's orders paid.....		116 61	
			<u>\$116 61</u>	<u>\$116 61</u>	
		IMPROVEMENT OF GROUNDS.			
		<i>Dr.</i>			
1881.					
June	20	To amount from state treasurer.....	351 25		
August	16	" amount from state treasurer.....	44 63		
		<i>Cr.</i>			
1881.					
September	30	By superintendent's orders paid.....		395 88	
			<u>\$395 88</u>	<u>\$395 88</u>	
		GALLERY IN AMUSEMENT HALL.			
		<i>Dr.</i>			
1880.					
November	16	To amount from state treasurer.....	195 00		
December	15	" amount from state treasurer.....	32 00		
1881.					
June	20	" amount from state treasurer.....	58 50		
		<i>Cr.</i>			
1881.					
September	30	By superintendent's orders paid.....		285 50	
			<u>\$285 50</u>	<u>\$285 50</u>	
		RADIATORS.			
		<i>Dr.</i>			
1881.					
September	6	To amount from state treasurer.....	1,000 00		
		<i>Cr.</i>			
1881.					
September	30	By superintendent's orders paid.....		1,000 00	
			<u>\$1,000 00</u>	<u>\$1,000 00</u>	

Treasurer's Report—*Concluded.*

TRANSFER OF PATIENTS.			
<i>Dr.</i>			
1881. September 30	To balance (overdraft).....	245 07	
<i>Cr.</i>			
1881. September 30	By superintendent's orders paid		245 07
		<u>\$245 07</u>	<u>\$245 07</u>
1881. October 1	By balance.....		245 07
INCOME FROM BURR ESTATE.			
<i>Dr.</i>			
1880. October 1	To balance.....	1,413 58	
October 2	" amount from W. H. Holden.....	280 00	
1881. August 16	" amount from coupons.....	480 00	
<i>Cr.</i>			
1881. September 30	By balance.....		2,173 58
		<u>\$2,173 58</u>	<u>\$2,173 58</u>
1881. October 1	To balance.....	2,173 58	
RECAPITULATION.			
<i>Dr.</i>			
1881. October 1	To balance on account of—		
	Ordinary expenses.....	2,717 36	
	Income of Burr estate.....	2,173 58	
<i>Cr.</i>			
	By balance on account of—		
	Transfer of patients.....		245 07
	" cash on hand.....		2,645 87
		<u>\$4,890 94</u>	<u>\$4,890 94</u>

TREASURER'S REPORT.

W. H. Wing, Treasurer, in account with the Illinois Northern Hospital for the Insane, for the year ending September 30, 1882.

ORDINARY EXPENSES.			
<i>Dr.</i>			
1881.			
October	1	To balance on hand.....	2,717 36
October	25	" amount from state treasurer.....	24,500 00
1882.			
January	25	" amount from state treasurer.....	24,500 00
April	22	" amount from state treasurer.....	24,500 00
July	28	" amount from state treasurer.....	25,500 00
September	30	" sundry receipts and collections.....	11,003 00
<i>Cr.</i>			
1882.			
September	30	By superintendent's orders paid.....	110,158 92
		balance,.....	2,561 71
			<u>\$112,720 63</u>
			<u>\$112,720 63</u>
1882.			
October	1	To balance.....	2,561 71
SEWER AND AIR-DUCTS.			
<i>Dr.</i>			
1881.			
December	19	To amount from state treasurer.....	253 12
<i>Cr.</i>			
1882.			
September	30	By superintendent's orders paid.....	253 12
			<u>\$253 12</u>
			<u>\$253 12</u>
ADDITIONAL POWER TO ENGINE, ETC.			
<i>Dr.</i>			
1882.			
May	18	To amount from state treasurer.....	1,400 00
September	19	" amount from state treasurer.....	554 57
<i>Cr.</i>			
1882.			
September	30	By superintendent's orders paid.....	1,954 57
			<u>\$1,954 57</u>
			<u>\$1,954 57</u>
HEATER AND PURIFIER.			
<i>Dr.</i>			
1882.			
June	13	To amount from state treasurer.....	1,100 00
<i>Cr.</i>			
1882.			
September	30	By superintendent's orders paid.....	1,100 00
			<u>\$1,100 00</u>
			<u>\$1,100 00</u>

Treasurer's Report—Continued.

		ARTESIAN WELL.			
		<i>Dr.</i>			
1882.					
July	10	To amount from state treasurer.....	4,809 39		
September	19	" amount from state treasurer	62 20		
		<i>Cr.</i>			
1882.					
September	30	By superintendent's orders paid		4,871 59	
			\$4,871 59	\$4,871 59	
		PUMP.			
		<i>Dr.</i>			
1882.					
September	19	To amount from state treasurer.....	900 00		
		<i>Cr.</i>			
1882.					
September	30	By superintendent's orders paid.....		900 00	
			\$900 00	\$900 00	
		NEW BOILERS.			
		<i>Dr.</i>			
1881.					
October	25	To amount from state treasurer.....	4,000 00		
November	17	" amount from state treasurer.....	2,000 00		
1882.					
February	8	" amount from state treasurer.....	2,000 00		
June	13	" amount from state treasurer.....	250 00		
		<i>Cr.</i>			
1882.					
September	30	By superintendent's orders paid.....		8,250 0	
			\$8,250 00	\$8,250 00	
		REPAIRS AND IMPROVEMENTS.			
		<i>Dr.</i>			
1881.					
October	25	To amount from state treasurer.....	844 74		
November	17	" amount from state treasurer.....	589 97		
December	19	" amount from state treasurer	200 00		
1882.					
February	8	" amount from state treasurer.....	153 79		
March	17	" amount from state treasurer.....	444 97		
April	11	" amount from state treasurer.....	298 88		
May	18	" amount from state treasurer	283 25		
June	13	" amount from state treasurer.....	1,059 52		
July	10	" amount from state treasurer.....	1,454 76		
August	10	" amount from state treasurer.....	360 59		
September	19	" amount from state treasurer.....	734 65		
		<i>Cr.</i>			
1882.					
September	30	By superintendent's orders paid.....		6,425 12	
			\$6,425 12	\$6,425 12	
		NEW SMOKE-STACK.			
		<i>Dr.</i>			
1881.					
October	25	To amount from state treasurer.....	400 00		
1882.					
February	8	" amount from state treasurer.....	296 50		
		<i>Cr.</i>			
1882.					
September	30	By superintendent's orders paid.....		696 50	
			\$696 50	\$696 50	

Treasurer's Report—Continued.

		NEW ENGINE AND PUMP HOUSE.			
		<i>Dr.</i>			
1881.					
November	17	To amount from state treasurer.....	1,059 14		
December	19	" amount from state treasurer.....	1,653 50		
		<i>Cr.</i>			
1882.					
September	30	By superintendent's orders paid.....		2,712 64	
				<u>\$2,712 64</u>	<u>\$2,712 64</u>
		IMPROVEMENT OF GROUNDS.			
		<i>Dr.</i>			
1881.					
October	25	To amount from state treasurer.....	44 00		
December	19	" amount from state treasurer.....	100 00		
1882.					
February	8	" amount from state treasurer.....	100 00		
March	17	" amount from state treasurer.....	50 00		
May	18	" amount from state treasurer.....	81 00		
July	10	" amount from state treasurer.....	37 00		
August	10	" amount from state treasurer.....	40 00		
September	19	" amount from state treasurer.....	40 00		
		<i>Cr.</i>			
1882.					
September	30	By superintendent's orders paid.....		492 00	
				<u>\$492 00</u>	<u>\$492 00</u>
		RADIATORS.			
		<i>Dr.</i>			
1881.					
October	25	To amount from state treasurer.....	2,000 00		
November	17	" amount from state treasurer.....	1,000 00		
		<i>Cr.</i>			
1882.					
September	30	By superintendent's orders paid.....		3,000 00	
				<u>\$3,000 00</u>	<u>\$3,000 00</u>
		TRANSFER OF PATIENTS.			
		<i>Dr.</i>			
1881.					
November	17	To amount from state treasurer.....	245 07		
		<i>Cr.</i>			
1881.					
October	1	By balance (overdraft).....		245 07	
				<u>\$245 07</u>	<u>\$245 07</u>
		NEW ENGINE AND FOUNDATION.			
		<i>Dr.</i>			
1881.					
October	7	To amount from state treasurer.....	1,600 00		
		<i>Cr.</i>			
1882.					
September	30	By superintendent's orders paid		1,600 00	
				<u>\$1,600 00</u>	<u>\$1,600 00</u>

Treasurer's Report—*Concluded.*

		DROP FLUES.			
		<i>Dr.</i>			
1881.					
October	25	To amount from state treasurer.....	400 00		
November	17	“ amount from state treasurer.....	200 00		
1882.					
March	17	“ amount from state treasurer.....	200 00		
		<i>Cr.</i>			
1882.					
September	30	By superintendent's orders paid		800 00	
			\$800 00		\$800 00
		INCOME FROM BURR ESTATE.			
		<i>Dr.</i>			
1881.					
October	1	To balance	2,173 58		
November	29	“ amount from W. H. Holden.....	1,000 00		
December	12	“ amount from W. H. Holden.....	400 00		
December	22	“ amount from W. H. Holden.....	100 00		
1882.					
January	29	“ amount from W. H. Holden.....	100 00		
January	31	“ amount from coupons.....	240 00		
February	27	“ amount from W. H. Holden.....	100 00		
March	7	“ amount from E. L. Bishop (interest).....	90 00		
March	11	“ amount from W. H. Holden.....	210 00		
March	31	“ amount from W. H. Holden.....	100 00		
May	18	“ amount from W. H. Holden.....	248 50		
July	24	“ amount from coupons.....	240 00		
August	15	“ amount from W. H. Holden.....	200 00		
September	13	“ amount from W. H. Holden.....	400 00		
		<i>Cr.</i>			
1882.					
September	30	By superintendent's orders paid		384 25	
		“ balance		5,217 83	
			\$5,602 08		\$5,602 08
1882.					
October	1	To balance.....	5,217 83		
		RECAPITULATION.			
		<i>Dr.</i>			
1882.					
October	1	To balance on account of ordinary expenses	2,561 71		
		“ balance on account of income of Burr estate	5,217 83		
		<i>Cr.</i>			
1882.					
October	1	By cash on hand		7,779 54	
			\$7,779 54		\$7,779 54

I have also on hand city of Chicago water loan bonds to the amount of eight thousand dollars (\$8,000 00), and one note of E. L. Bishop for fifteen hundred dollars (\$1,500 00), the same being the amount of the Jonathan Burr estate in my hands, the “income” which only can be used.

Respectfully submitted,

W. H. WING, *Treasurer.*

APPENDIX I.

REPORT UPON HEATING-APPARATUS,

By the Walworth Manufacturing Company, of Boston.

NORTHERN HOSPITAL FOR THE INSANE,
Elgin, Illinois, *June 20, 1881.*

To the Trustees and Superintendent of the Northern Hospital for the Insane.

GENTLEMEN:—In accordance with your request to “investigate and report upon needed changes in heating apparatus” for this building, I have the honor to report that I have carefully examined the condition of the apparatus, its mode of construction, design and capacity, and find the following conditions.

Condition of Apparatus.

Cubic space to be warmed by indirect radiation, 1,823,000 cubic feet.

Glass and wall exposures have not been measured, for want of time, but are estimated as in the usual proportion for buildings of this class.

Ventilation is assumed to be of the minimum rate of 40 cubic feet per minute, *per capita*.

A test of the volume of air in the main air-duct, passing from the fan, shows that insufficient air for that purpose or standard is delivered from the fan.

Inquiry of the superintendent, engineer and other officials proves that, with the exception of “B” wards, north and south, the attaining of an equal and uniform temperature of 70° is most difficult to perform; that frequently, in high or strong winds, the warm air is forced down the heat-flues, and cold air from the attic is forced down the vent-flue.

Such is the condition, so far as results of temperature and ventilation are concerned.

Description.

The heating apparatus consists, briefly, of what is known as a “high-pressure” “indirect coil” system—steam at from forty to fifty pounds pressure being generated in six boilers, 48 inches in diameter by 13 feet long, containing thirty-eight tubes three and one-half inches by thirteen feet, and measuring thirty H. P. each; thence

the steam passes by pipes to the wrought-iron "return-bend coils" placed at the bottom of flue-openings in the basement, thus warming the air before passing up the flues, and the water of condensation is discharged back to an open cistern near the pump-room, and pumped back, when sufficiently cool, to the boilers. The usual adjuncts of pumps, heaters, fan, engine, etc., for the completion of such a system, are all in proper connection, but the central principle of the whole is boilers generating steam at from forty to fifty pounds pressure, conveyed thence to pipe-coils for radiation, and the water of condensation flowing into an open tank.

Fuel Consumed, etc.

I find that the fuel consumed by this apparatus from
January 1, 1880, to January 1, 1881, was a total of.....5,134 tons.
Of which there were used for pumping..... 146 "

Amount used for heating.....	4,988 tons.
From January 1, 1879, to January 1, 1880.....	4,921 tons.
Deduct amount used for gas-making.....	114 tons.
Amount used for pumping.....	146 "
	<hr/> 260 "

Amount used for heating.....	4,661 tons.
Total consumption of fuel for 1879.....	4,661 tons.
Total consumption of fuel for 1880.....	4,988 "

Average per year.....	4,824½ tons.
Cubic space to be heated.....	1,823,000 feet.
Apparatus in use.....	200 days per year.
" "	16 hours per day.
Per cent. of fuel used for power.....	16 per cent.
Cost of heating 1,000 feet per hour, equals 1	38-100 pounds of coal.

Proper Ratio of Fuel to Space Heated.

The above result obtained tells its own story. If comparison is made with other well known institutions, the cost of heating this hospital will be found to be more than double what it should be. The cost should not exceed, under any circumstances, 51-100 to 52-100 pounds of coal per 1,000 cubic feet per hour.

In the Eastern Asylum for the Insane, at Pontiac, Michigan, the cost is 49-100, with a ventilation of fifty cubic feet *per capita*, per minute.

In the Michigan State Capitol, at Lansing, Michigan, the cost is 48-100, with a like ventilation.

In the Washington University, at St. Louis, Mo., the cost is 43-100, but with only about thirty cubic feet *per capita*, per minute.

In the Smith Academy it is 33-100 pounds of coal per thousand cubic feet, with about twenty cubic feet *per capita*, per minute.

The ventilation required for buildings of this class, however, is from forty to fifty feet per minute, *per capita*.

Causes of Excessive Cost at Elgin.

The excessive cost of heating in this institution is due to several causes :

(1). The employment of the "high pressure" system, whereby the water of condensation is not returned to the boilers, except by pumping

(2). The employment almost exclusively of "indirect" radiation, without any "direct" radiation placed in the halls and corridors, to compensate for the loss by glass and exposed wall surface.

(3). The fact that the boilers are inadequate to permit of any section or portion of them to be shut off, for the purpose of cleaning, during the coldest weather, and as the water is very hard, and largely impregnated with lime, the scale accumulating makes the cost of generating steam much greater.

(4). The construction of the air-ducts is such that it is impossible to sustain an even "plus" condition in the different sections of the building, and much more fan-power is used for the deficient sections than is needed for the others.

Several minor causes may be named also, the changing of which will all tend in the direction of economy; but the primary and principal losses in fuel are caused by the two causes first-named, and for a remedy I would respectfully recommend :

Recommendations.

(1). That the apparatus be changed from a "high pressure" to "low pressure," returning its water of condensation direct to the boilers by gravity alone. To accomplish this, it will be necessary to change the radiation from "return-bend coils" to "radiators," which latter operate successfully with even a minus pressure of steam, or that below the atmosphere, and also occupy much less space vertically; also to change the pipe-connections and mains to others of larger size, suitable to admit of circulation at one pound pressure; and also to lower the level of the boiler-room, or water-line of boilers, some thirty inches. The latter can be easily accomplished, inasmuch as the condition of the present boilers makes a change and re-setting imperative. The present supply-pipe can be lowered to the floor and used for a return, and all the pipe that is in good order can be utilized and be of as much value as new pipe. Only a complete plan, in detail and specification however, will show the exact sizes required and the amount of new material needed.

(2). That new boilers of greater capacity be supplied for the present worn-out ones: and to that end I would advise the use of sixty-inch by sixteen foot boilers, containing fifty-two tubes four inches in diameter by sixteen feet in length, and the shells to be made of 5-16 "homogenous steel." The latter material is much more durable than any of the brands of iron, and gives a better evaporation. Six such boilers set will give always a span of boilers which may be repaired or cleaned in turn, and thus avoid the loss by reason of hard water.

These boilers should be so connected with steam and return drums and valves, that any one or more of them can be used for the high or "power" pressure, and the others on the low pressure

system. The water will be returned direct to them, thus avoiding the use of the cistern or hot-well, and inasmuch as the only waste of water will be that due to insensible evaporation and the escape at the air-valves, the difficulty arising from hard water is at once eliminated. Sufficient rain-water can be obtained for the boiler supply from a very moderate sized cistern.

(3). I would advise that a new fan, fourteen feet in diameter, be provided, having a direct engine connection, or with the engine-crank directly on the fan-shaft. Such fan to be competent to supply 100,000 cubic feet of air, per minute, in unobstructed ducts; and the supply or quantity to be regulated by the speed of the engine. You will thus avoid the friction of the shafting and gearing, and use no more steam than is absolutely necessary for fan propulsion. The operating of the fan by an engine competent for other uses involves using the engine much of the time when only the fan is employed and at a consequent loss.

(4). It is absolutely essential that the air-ducts be so constructed as to contain the air delivered from the fan at a slight pressure, until delivered through the radiators and into the flues leading to the different wards. As at present arranged and used, they are open to the whole basement of the building, having many leaky windows and doors, up-shafts in the form of dumb-waiters and stairways to the building, and hardly any amount of the fan delivery will keep up what is essential, a pressure of air in the ducts equal to and above the pressure of the average wind on the building, or about a column of water one-half an inch high. Such changes can be made with no great outlay, and consist chiefly in extending the tunnels or air-ducts under the food-car tracks in "B" and "C" wards, and in making partitions in all the wards where the tracks pass through the central corridors.

(5). I should advise that all heating of water for the laundry and other domestic uses, in the rear centre, be performed by utilizing the exhaust-steam of the fan and power engines, pumps, etc., and that the surplusage of such steam, whatever it may be, be utilized for heating the air entering the duct. For that purpose, sufficient radiators may be placed in the duct to condense all the surplus steam, and each heat unit so extracted is a unit less to be imparted by the direct steam in the basement; probably 1,009 square feet of surface so placed will perform the work. The water of condensation can be pumped at slight cost from the duct to a tank or receiver conveniently situated, and used in the laundry, but it should not be put into the boilers, as it will contain more or less soil from the engine cylinders.

Additional Recommendations.

I have thus briefly indicated the requirements necessary to secure either a successful or economical steam apparatus. There is, however, a defect in the exit of foul air at the cupolas, which requires immediate remedy. Under the existing conditions, when the wind blows strongly, or even moderately, the accumulated pressure of the wind or air entering the cupolas completely overcomes the plus or duct pressure by the fans. The moment that is the case, the movement of air is from the attic *down* instead of upwards, and inasmuch

as the water-closet vent-shafts empty into the same common foul-air duct as the rooms below, your honorable board will readily perceive that a wind pressure that will force the foul air down the flues is anything but desirable. I would suggest that the present boards be removed, and a shaft about twenty-five feet long carried up inside the cupolas, which shall be connected with the foul-air ducts at the bottom, and that shaft lined with a hollow-base radiator having pipes the entire length of the shaft.

In addition, I would suggest that the water-closet shafts be carried up and out through the roof, so that they in no way connect with the ducts leading from the rooms below. The changes in the air-ducts, attic or cupolas, and in the basement, are essential, whether high or low pressure is used, and do not affect the question of economy of fuel, except in so far as the control of the temperature in the rooms may be concerned. That question is solely involved in returning the water to the boilers by gravity—utilization of exhaust steam-boilers adequate to the supply of steam and water forming no scale.

In connection with the boilers must be considered the chimney or draft. The present chimney is too small for any additional boiler capacity, that is for economical combustion of fuel. More boilers could be applied, but it would be at a comparative loss in fuel. In the consideration of a new chimney, I should advise that it be built seventy-two inches in diameter and one hundred and thirty feet high; anything less than that would be imprudent, so far as sectional area is concerned, and less than that height will hardly carry the smoke clear of the buildings or give the requisite draft.

For power uses, I should recommend the employment of an automatic cut-off engine, of some well-known maker's design, whereby the amount of steam used is always proportioned to the work to be performed, be it more or less, and hence the greatest economy is obtained. Having indicated the changes necessary to render this apparatus a reasonably economical and successful one, it only remains to add that the whole or part of the apparatus may be changed, as is deemed best, and the measure of economy will be directly in proportion to the part changed. I will undertake to make plans in detail, with such specifications as are necessary to the complete understanding of the work, and by utilizing the present material to the fullest extent, and such personal supervision as the case requires, produce an apparatus that shall be as economical as any other modern apparatus in use, and at the least possible cost to the state.

The amount of good bituminous coal that should properly be consumed in this institution is:

For heating and ventilation.....	1,840 tons.
For pumping.....	146 “
For power, (laundry, etc.).....	300 “

Total.....2,286 tons.

instead of something over four or five thousand tons per year, as in the past. Respectfully submitted,

LEVI R. GREENE,
Civil Engineer,

(Representing the Walworth Manufacturing Co., Boston, Mass.)

APPENDIX II.

ANALYSIS OF ARTESIAN WELL-WATER.

LABORATORY OF RUSH MEDICAL COLLEGE,
Chicago, *August 2, 1882.*

GENTLEMEN:—I have the honor of reporting the following as the result of my analysis of water flowing from the artesian well sunk in the grounds of the Northern Hospital for the Insane, at Elgin, Illinois:

Lower Stratum (2,063 Feet Deep).

Each gallon of 231 cubic inches contains:

Silica	0.240	grains.
Chloride of sodium.....	1.428	“
Sulphate of sodium.....	1.777	“
Carbonate of sodium.....	0.738	“
Carbonate of calcium.....	8.395	“
Carbonate of magnesium.....	4.414	“
Iron and alumina.....	0.118	“
Volatile and organic.....	0.992	“
Total.....		18.102 “

Gases. { Carbonic acid.
 { No sulphuretted hydrogen.

Hardness, on Clark's Scale.

Before boiling.....	10.35°
After boiling.....	3.20°

For the sake of comparison, I give the corresponding degrees of hardness of Lake Michigan water:

Before boiling.....	5.50°
After boiling.....	2.40°

The hardness of the water which you are now using in your boilers, coming from the spring, is 13°.

Upper Stratum (1,000 feet deep).

Sulphur Water.

Each gallon of 231 cubic inches contains:

Silica.....	0.710	grains.
Chloride of sodium.....	1.309	“
Sulphate of sodium.....	1.865	“
Carbonate of sodium.....	2.761	“
Sulphate of potassium.....	0.249	“
Carbonate of calcium.....	9.109	“
Carbonate of magnesium.....	3.877	“
Carbonate of iron.....	0.129	“
Alumina.....	0.059	“
Volatile and organic.....	0.719	“
<hr/>		
Total.....	20.787	

Gases { Carbonic acid.
 { Traces of sulphuretted hydrogen.

Yours respectfully,

WALTER S. HAINES.

To the Board of Trustees, Hospital for the Insane, Elgin, Illinois.

APPENDIX III.

OPINION OF THE ATTORNEY-GENERAL RELATIVE TO INSANE CONVICTS.

SPRINGFIELD, Illinois, *January 13, 1882.*

GENTLEMEN:—I have the honor to receive your favor bearing date tenth instant, asking whether there is legal warrant for the detention of insane convicts, received from the penitentiaries, after the term of imprisonment has expired, and if so where it is to be found; and if there is no such warrant, should the superintendent, in a case where the convict is still insane at the expiration of his term, return him to the county from which he was sent to the penitentiary? or should he discharge him? or what should be done with him?

The general assembly of our state do not seem to have made any specific provision for this class of cases. We must, therefore, be governed by the general enactments in reference to insane persons.

Rev. Stat. Chap. 108, Sec. 42, provides that if any case of insanity shall occur in the penitentiary, such insane person shall at once be removed to a hospital for the insane, and if the patient recover before his term of imprisonment expires he shall be returned to the penitentiary.

This section seems to be all there is of our statutes applying to insane convicts in the penitentiary, that does not apply to all insane persons. Without some special provision for it, a convict, although insane, could not be allowed outside the penitentiary confines until his term had expired. This permits him to be taken to the hospital for the insane. Once there, he is to be treated, retained and discharged the same as other patients, unless there is some law applying specially to him. There is none, except in reference to his discharge in case of recovery before his time of imprisonment expires. In that event he must be returned to the penitentiary. If his term of imprisonment expires before he shall be discharged from the hospital, and before his recovery, then he is an inmate on the same footing as the others, subject to the same rules, and entitled to the same benefits; and the same rules for his discharge will apply to him that apply to other patients in the hospital.

Very truly yours,

JAMES McCARTNEY,
Attorney-General.

APPENDIX IV.—ESTIMATES.

1. ESTIMATE FOR CHANGING SYSTEM OF HEATING AND VENTILATION IN SOUTH WING AND CENTRE BUILDING.

Iron Work.

Item.	Quan- tity.	Meas- ure.	Price.	Amount.
Radiators.....	16,262	Feet..	40	\$6,504 80
No. 1 radiator valves, 1¼ inch.....	48		\$1 65	79 20
“ “ “ 1 “.....	48		1 25	60 00
“ “ “ ¾ “.....	26		1 00	26 00
Angle valves, 1¼ inch.....	124		1 25	156 00
“ “ 1 “.....	275		90	247 50
“ “ ¾ “.....	32		75	99 00
“ “ 4 “.....	10		12 00	120 00
Globe “ 6 “.....	1		28 00	28 00
“ “ 7 “.....	1		45 00	45 00
“ “ 14 “.....	1		125 00	125 00
Expansion joint, brass.....	1		175 00	175 00
Through-way valves, 10 inch.....	1		85 00	85 00
Automatic air valves.....	163		90	146 70
Pipe, 14 inch.....	370	Feet..	6 50	2,405 00
“ 10 “.....	60		3 20	192 50
“ 7 “.....	75		1 50	112 00
“ 6 “.....	200		1 10	220 00
“ 5 “.....	100		90	90 00
“ 4 “.....	150		60	90 00
“ 3 “.....	450		38	171 00
“ 2½ “.....	400		30	120 00
“ 2 “.....	500		1 84	92 00
“ 1½ “.....	900		1 32	118 80
“ 1¼ “.....	1,000		1 08	118 80
“ 1 “.....	850		76	64 60
“ ¾ “.....	750		54	40 50
Elbows, 14 inch.....	4		12 50	50 00
“ 10 “.....	6		7 50	45 00
“ 7 “.....	3		2 80	8 40
“ 6 “.....	3		1 40	4 20
“ 4 “.....	10		65	6 50
“ 3 “.....	10		27	2 70
“ 2½ “.....	20		24	4 80
“ 2 “.....	20		12	2 40
“ 1½ “.....	200		7	7 00
“ 1¼ “.....	250		6	15 00
“ 1 “.....	500		5	25 00
“ ¾ “.....	350		3	10 50
Tees, 14 inch.....	2		16 00	32 00
“ 10 “.....	3		10 00	30 00
“ 7 “.....	1		4 00	4 00
“ 6 “.....	2		2 10	4 20
“ 4 “.....	20		1 00	20 00
“ 3 “.....	30		55	17 50
“ 2½ “.....	50		36	18 00
“ 2 “.....	60		18	10 80
“ 1½ “.....	75		13	9 75
“ 1¼ “.....	100		9	9 00
“ 1 “.....	80		7	5 60
Roll-hangers, 14 inch.....	50		6 50	325 00
“ 7 “.....	9		4 50	40 50
“ 6 “.....	42		3 50	112 00
“ 5 “.....	13		3 00	39 00
“ 4 “.....	20		3 00	60 00
Ring-hangers, 3 inch.....	68		1 00	68 00
“ 2½ “.....	60		90	54 00
“ 2 “.....	75		80	60 00
“ 1½ “.....	120		70	84 00
“ 1¼ “.....	150		65	97 50
“ 1 “.....	100		60	60 00
Radiator boxes.....	163		6 50	1,059 50
Labor.....				2,500 00
Total pipe-fitting.....				\$16,634 75

Carpenter and Mason Work.

Item.	Amount.	
Altering 30 heating flues in ward D, north.....	\$30 00	
Altering 27 ventilating flues in ward D, north.....	27 00	
Altering 48 heating flues in ward C, north.....	48 00	
Altering 45 ventilating flues in ward C, north.....	45 00	
Altering 80 heating flues in ward B, north.....	80 00	
Altering 96 ventilating flues in ward B, north.....	96 00	
Altering 91 heating flues in ward A, north.....	91 00	
Altering 83 ventilating flues in ward A, north.....	83 00	
Total.....	\$550 00	
Same for wards in south wing.....	550 00	\$1,100 00
Air-duct 3½ x 5 feet and 120 feet long: (920 cubic feet of brick wall,) 20,240 brick, at \$10.00.....	202 40	
25 barrels of lime, at 80 cents.....	20 00	
Labor.....	140 30	
Cutting through concrete and foundation.....	6 00	
Man-hole, with bull's eye.....	13 00	
Centres for turning arch.....	15 00	
Contingencies.....	39 80	436 50
Extension of "B" air-duct: (309 cubic feet of brick wall); 6,754 brick, at \$10.00.....	67 54	
7 barrels of lime.....	5 60	
Labor.....	54 03	
Iron bearing bars.....	37 80	
Contingencies.....	16 47	181 44
Cross-walls, or bulkheads for air-ducts, north: 1 wall six feet by seven; 3 walls, eight feet by twelve; 1 wall, eight feet by fourteen; 1 wall, nine feet by six; (total 500 feet)— 7,500 brick.....	75 00	
Lime.....	6 40	
Labor.....	32 00	
Contingencies.....	11 34	
Same for south side.....	\$124 74 124 74	249 48
Building ventilating chimneys: 12,000 brick.....	120 00	
Lime.....	9 60	
Labor.....	50 00	
Iron ventilating tops.....	100 00	279 60
Total carpenter and mason work.....		\$2,247 02
Iron work.....		\$16,634 75
Carpenter and mason work.....		2,247 01
Total cost of changing heating and ventilation.....		\$18,881 77

2. ESTIMATE FOR RESERVOIR.

CHICAGO AND NORTHWESTERN RAILWAY Co.,
ENGINEER'S OFFICE,
CHICAGO, January 2, 1883.

To the Board of Trustees,
Northern Hospital for the Insane, Elgin, Illinois.

GENTLEMEN:—In accordance with your request, I submit herewith an estimate, showing the cost of puddling with clay the artificial

lake or reservoir on the hospital grounds at Elgin, as per sketch submitted, said clay to be to the depth of eighteen inches on the bottom and sides of the reservoir, to-wit:

Number of cubic yards of clay required, four thousand five hundred (4,500).

Hauling one mile and a half with team, loading and putting in place, one dollar and twenty cents (\$1.20) per cubic yard, amounting to five thousand four hundred dollars.

Respectfully submitted,

E. H. JOHNSON,
Chief Engineer.

3. ESTIMATE FOR FRONT FENCE.

CHICAGO, Illinois, November 2, 1882.

GENTLEMEN:—We beg leave to submit the following drawing and estimate of cost for the construction of a fence and gate-way upon the front grounds of the hospital at Elgin; four hundred and eighty feet of fence, including four large stone posts, in imitation of rough ashlar; one drive-gate with opening seventeen feet; one entrance-gate, opening five feet; one blind gate; two large iron posts, one at each end of fence; small iron posts set along the line every eight feet.

Fence to be made of material herein described:

Top rail, bar iron, $1\frac{3}{8}$ inches by $\frac{3}{8}$ -inch.

Middle rail, bar iron, $1\frac{1}{4}$ inches by $\frac{3}{8}$ -inch.

Bottom rail, angle iron, $1\frac{1}{2}$ inches.

Line posts, $1\frac{1}{4}$ inches square.

Pickets, $\frac{1}{2}$ -inch round.

Stone posts for big gate, 3 feet square, 12 feet high.

Stone posts for small gate, 2 feet square, $6\frac{1}{2}$ feet high.

Height of fence, 4 feet.

Width of entrance and blind gates, 5 feet each.

Width of drive-gate, 17 feet.

Iron posts for fence to be set in ground 30 inches below grade-line.

All iron to be scaled, japanned and varnished.

Lamps for top of posts to be chosen by trustees.

The above to be set in place for \$1,848 00.

Balance of distance, to south end of ground, about two hundred rods, to be of lighter construction and made of a combination of wood and iron, the cost, including one gate-way, to be not less than six dollars a rod, \$1,200 00.

Total cost of fence and gate-way, \$3,048 00.

Respectfully submitted,

HARDING, BARBEE & CO.

4. ESTIMATE FOR LAUNDRY MACHINERY.

CHICAGO, *July 25, 1882.*

GENTLEMEN: We propose to furnish the Northern Insane Hospital at Elgin, Illinois, delivered F. O. B., Chicago:

2 brass washing-machines, (newest improved) at \$600.00..	\$1,200 00
1 steam mangle, sixty-inch roll (newest improved).....	500 00

Total.....	\$1,700 00
------------	------------

These machines we guarantee to be the best manufactured for their various purposes.

Very respectfully,
TROY LAUNDRY MACHINERY CO., LIMITED.

GEO. W. GORDON,
Manager.

5. ESTIMATE FOR ELEVATOR.

CHICAGO, *December 29, 1882.*

GENTLEMEN: The undersigned propose to furnish and set up in the laundry of the Insane Hospital at Elgin, a No. 11 Reedy Improved Worm-Gear Power Elevator, with a hoisting capacity of 2,000 pounds, to elevate the wet clothes from wash-room to dry-room, for the sum of five hundred dollars. The material and workmanship to be first-class throughout, and constructed in accordance with printed specifications submitted.

Very respectfully,
REEDY ELEVATOR WORKS.

6. ESTIMATE FOR SCREENS.

OFFICE OF ENTERPRISE WIRE CLOTH M'F'G. Co.,
CHICAGO, *December 29, 1882.*

GENTLEMEN: We propose to make for you the following screens for ventilation (1 $\frac{1}{4}$ -inch mesh, number 11 wire; 5-16-inch round iron frames, with wire eyes for screws):

For D wards south, 8 screens, 2 by 6 feet.

For B wards south, 8 screens, 1 foot 8 inches by 6 feet.

For A wards south, 8 screens, 2 feet 2 inches by 7 feet 2 inches.

For A wards north, 8 screens, 2 by 6 feet.

For B wards north, 8 screens, 2 feet 11 inches by 6 feet 3 inches.

For D wards north, 8 screens, 1 foot 7 $\frac{1}{2}$ inches by 5 feet 10 inches.

The whole to be painted and delivered on cars, for the sum of one hundred and eighty-five dollars.

Respectfully yours.

KIELY & VOSS.

7. ESTIMATE FOR NEW FLOORS.

Relaying the hall floors of six wards in the north wing with hard maple or yellow southern pine:

“C” wards 1, 2 and 3, 5,415 feet, 1¼ inches thick, grooved and tongued, at \$45 per M.....	\$243 68
“D” wards 1, 2 and 3, 2,804 feet, 1¼ inches thick, grooved and tongued, at \$45 per M.....	126 98
Nails.....	120 00
Extra stringers, labor, etc.....	600 00
Total.....	<u>\$1,090 66</u>

8. ESTIMATE OF COST OF PUTTING ADDITIONAL STORY OVER LAUNDRY DEPARTMENT.

Items.	Quantity.	Measure.	Price.	Amount.
<i>Mason Work.</i>				
(948 cubic feet of wall.)				
Brick	21,000		\$10 00	\$210 00
Lime.....	25	Bbls...	80	20 00
Removing old cornice				25 00
Laying brick.....				181 50
Cut stone.....				112 50
Lathing and plastering.....	454	Yards..		136 20
Contingencies				65 00
				\$750 20
<i>Carpenter Work.</i>				
1 timber, 10'' x 12'' x 28'	280	Feet...	\$23 00	\$6 44
2 timbers, 8'' x 8'' x 12'	128	" "	18 00	2 30
22 ceiling joists, 2'' x 6'' x 24'	528	" "	20 80	11 00
24 " " 2'' x 6'' x 18'	432	" "	18 72	8 00
33 rafters, 2'' x 10'' x 28'	1,551	" "	24 50	38 00
42 joists, 3'' x 12'' x 22'	2,324	" "	23 00	53 50
100 " " 2'' x 4'' x 12'	800	" "	15 00	12 00
Common boards.....	2,500	" "	18 00	45 00
"B" flooring, rough.....	2,000	" "	37 00	74 00
Third 1¼'' clear, surfaced 2 sides.....	500	" "	47 00	23 50
1''	500	" "	37 00	18 50
Windows.....	1			10 00
Doors.....	4		20 00	80 00
.....	3		12 00	36 00
Nails.....	800	Po'nds	4½	34 00
Tin roof.....	15½	Sq'res. }		
Gutter.....	46	Feet... }		136 00
				588 24
Total.....				\$1,338 45

9. ESTIMATE OF COST OF LOWERING FLOOR OF COAL ROOM AND UNDERPINNING SAME (3 FEET), WITH CONNECTING DUCT, RE-SETTING SCALES, ETC.

1,530 cubic feet of stone work, at \$8 00.....	122 40
16 barrels lime	12 80
Labor.....	107 10
Contingencies.....	24 00
Total.....	\$266 30

APPENDIX V.—EXHIBITS.

EXHIBIT I.

Number of patients employed in various ways, in and out of doors, throughout the year.

Male Department.

Employment.	No.	Employment.	No.
On grounds.....	13	<i>Brought forward</i>	59
On farm.....	10	Assisting butcher.....	1
In garden.....	15	Filling straw beds.....	2
Assisting superintendent in cleaning basement and about the buildings.....	2	Assisting in boiler-room.....	3
Assisting engineer in plumbing, etc.....	2	Assisting porter in general cleaning.....	3
Assisting mason.....	2	Assisting in kitchen.....	4
Assisting stonemason.....	2	Assisting in laundry.....	1
Assisting plasterer.....	1	Assisting in bakery.....	2
Assisting carpenter.....	2	Assisting in green-house.....	4
Assisting painter.....	2	Repairing clothing.....	2
Weighing coal.....	1	Assisting in dining-rooms.....	48
In wash house.....	2	Assisting in hall-work.....	54
Taking care of stock.....	4	Shoveling coal.....	6
Stable-work.....	1	Digging ditches and assisting engineer (occasional).....	14
<i>Carried forward</i>	59	Total.....	203

Female Department.

Employment.	No.	Employment.	No.
Mending-room (permanently).....	8	<i>Brought forward</i>	105
Mending-room (occasional).....	4	Wash-room.....	4
Sewing-room (permanently).....	10	Kitchen (occasional).....	7
Sewing-room (occasional).....	5	Assisting in hall-work, cleaning, etc.....	45
Work in wards for sewing-room.....	5	Assisting in dining-rooms.....	35
Mending in wards.....	31	Knitting.....	17
Fancy work.....	22	Total.....	213
Ironing-room (permanently).....	15		
Ironing-room (occasional).....	5		
<i>Carried forward</i>	105		

EXHIBIT II.

Farm Products.

Item.	Measure	1881.		1882.		1881 and 1882.	
		Am't.	Cost.	Am't.	Cost.	Am't.	Cost.
PRODUCE.							
Oats.....	Bushels.	2,045	\$ 715 75	3,723	\$1,303 05	5,768	\$2,018 80
Milk.....	Gallons.	20,522	2,018 07	25,018	2,976 34	45,540	4,994 41
Potatoes.....	Bushels.	153	145 35	1,182	458 70	1,335	604 05
Corn.....	"	1,522	684 90	2,000	1,360 00	3,522	2,044 90
Straw.....	Tons....	60	300 00	60	270 00	120	570 00
Hay.....	"	80	560 00	100	1,000 00	180	1,560 00
Corn fodder.....	"	50	150 00	60	300 00	110	450 00
CASH RECEIPTS.							
Sale of pigs.....			10 00	.....	4 00	.....	14 00
Sale of bulls.....			20 00	.....	30 00	.....	50 00
Sale of cows.....			48 00	.....	.....	.....	48 00
Sale of hides.....			1 25	.....	.....	.....	1 25
Hauling coal.....			.....	.....	70 20	.....	70 20
STOCK SLAUGHTERED FOR USE IN HOUSE.							
Pork.....	Pounds.	19,729	1,043 09	21,394	1,396 67	41,123	2,439 76
Beef.....	"	12,982	669 00	7,615	462 00	20,597	1,131 00
Veal.....	"	2,007	134 50	2,333	120 50	4,340	255 00
Total.....			\$6,499 91	.....	\$9,751 46	.....	\$16,251 37

EXHIBIT III.

Garden Products.

Article.	Quantity.	Measure.	Price.	Value.
Apples.....	11	Bushels..	50	\$5 50
Asparagus	18	"	\$3 00	54 00
Beans, for seed	7	"	2 00	14 00
Beans, Lima	28	"	1 50	42 00
Beans, Lima, for seed.....	2	"	5 00	10 00
Beans, string	405½	"	40	162 20
Beets	736	"	40	294 40
Cabbage, early.....	4,739	Heads....	10	473 90
Cabbage, red.....	125	"	20	25 00
Cabbage, winter.....	17,000	"	15	2,550 00
Carrots	357	Bushels..	25	89 25
Cauliflower.....	397	Heads....	10	39 70
Celery	1,000	Roots	02	20 00
Cherries	122	Quarts...	06	7 32
Corn, sweet	3,382	Dozen....	06	202 92
Corn, sweet, for seed.....	1	Bushel...	1 50	1 50
Crab apples	2	"	2 50	5 00
Cucumbers	161	Dozen....	05	8 05
Cucumbers	63½	Bushels..	80	50 80
Cucumbers, for pickles	302	"	90	271 80
Cucumber seed	2	Pounds...	1 25	2 50
Currants.....	128	Quarts...	05	6 40
Egg plants	309	"	10	30 90

Exhibit III—*Concluded.*

Article.	Quantity.	Measure.	Price.	Value.
Gooseberries.....	104	Quarts...	10	\$10 40
Grapes.....	5,251	Pounds..	04	210 04
Lettuce.....	4,951	Bunches.	03	148 53
Lettuce.....	160	Bushels..	\$1 00	160 00
Lettuce seed.....	6	Pounds..	80	4 80
Marjoram.....	40	Bunches.	10	4 00
Marjoram, seed.....	250	"	10	25 00
Melons, nutmeg.....	616	.....	10	61 60
Melons, water.....	618	.....	10	61 98
Onions.....	170	Bunches.	04	6 80
Onions.....	283½	Bushels..	60	170 10
Oyster plant.....	10		1 00	10 00
Parsley seed.....	4	Pounds..	50	2 00
Parsnips.....	550	Bushels..	40	220 00
Peas.....	314	"	60	188 40
Peas, for seed.....	6⅛	"	2 00	12 25
Peppers.....	4	"	2 25	9 00
Radishes.....	133	"	70	93 10
Radishes.....	3,430	Bunches.	02	68 60
Radishes, winter.....	10	Bushels..	1 20	12 00
Radish seed.....	9	Pounds..	35	3 15
Raspberries.....	30	Quarts...	15	4 50
Rhubarb.....	12,945	Pounds..	02	258 90
Sage.....	300	Bunches.	10	30 00
Spinach.....	232½	Bushels..	40	93 00
Squash, summer.....	2,901	.....	03	87 03
Squash, winter.....	3½	Tons.....	40 00	140 00
Strawberries.....	789	Quarts..	11	86 79
Summer savory.....	130	Bunches.	10	13 00
Sweet basil.....	50	"	10	5 00
Thyme.....	200	"	10	20 00
Tomatoes.....	500½	Bushels..	35	175 18
Turnips.....	208½	"	35	72 91
Total.....				\$6,835 08

EXHIBIT IV.

STATEMENT of slaughter-house, for the fiscal year ending September 30, 1881.

	Number.	Items.	Dressed weight.		Cost.	
Purchas'd	214	Beef cattle.....	108,692	.....	\$6,510 75	
	85	Veal calves.....	6,484	.....	428 08	
	418	Sheep and lambs.....	16,599	.....	1,397 25	
		Total purchased.....		131,775		\$8,336 08
Furnished by farm.	42	Beef cattle.....	12,982	.....	669 00	
	35	Veal calves.....	2,007	.....	134 50	
	84	Fat hogs.....	19,729	.....	1,043 09	
		Total furnished by farm.....		34,718		1,846 59
		Total amount consumed.....	166,493			\$10,182 67
		Add wages of butcher.....			642 50	
		board of butcher.....			116 57	
		board of horses.....			60 00	
		horseshoeing and repairs.....			14 90	833 97
		Deduct sale of hides, etc.				\$11,016 64
		Net cost of 166,493 pounds of meat.				2,245 85
		Average cost of meat per pound....	.05.27.			\$8,770 79

For the fiscal year ending September 30, 1882.

	Number.	Items.	Dressed weight.		Cost.	
Purchas'd	228	Beef cattle.....	122,754	.....	\$8,492 40	
	72	Veal calves.....	6,797	.....	534 78	
	376	Sheep and lambs.....	14,648	.....	1,324 34	
		Total purchased.....		144,119		\$10,451 52
Furnished by farm.	14	Beef cattle.....	7,615	.....	462 00	
	28	Veal calves.....	2,333	.....	120 50	
	75	Fat hogs.....	21,394	.....	1,396 67	
		Total furnished by farm.....		31,342		1,979 17
		Total amount consumed.....	175,541			\$12,330 69
		Add wages of butcher.....			540 00	
		board of butcher.....			156 00	
		board of horses.....			120 00	
		1 wagon			100 00	
		horseshoeing and repairs			32 70	948 70
		Deduct sale of hides, etc.....				\$13,279 39
		Net cost of 175,541 pounds of meat				2,178 56
		Average cost of meat a pound....	.06.32.			\$11,100 83

EXHIBIT V.—MATRON'S REPORT.

1.—STATEMENT of work done in the Sewing-Room from October 1, 1880, to September 30, 1882.

MANUFACTURED.	REPAIRED.
180 Aprons.	737 Aprons.
117 Bed-ticks.	3488 Bedticks.
510 Blankets.	2033 Blankets.
19 Bibs.	253 Curtains.
606 Chemise.	2754 Coats.
29 Comforts.	3297 Chemise.
11 Bolster covers.	742 Counter-panes.
6 Corset covers.	305 Camisoles.
4 Crumb-cloths.	64 Comforts.
1600 Candy bags.	84 Carpets.
20 Camisoles.	13807 Drawers.
6 Carpets.	5939 Dresses.
124 Counterpanes.	9549 Hose.
2 Cuffs, pairs.	10 Hoods.
347 Curtains.	90 Ironing sheets.
654 Drawers.	282 Night dresses.
1115 Dresses.	307 Napkins.
6 Handkerchiefs.	124 Nightshirts.
9 Ironing sheets.	10427 Pants.
1444 Ironing holders.	2222 Pillow slips.
76 Night dresses.	18865 Shirts.
4 Night caps.	11985 Socks.
182 Napkins.	2148 Sheets.
876 Pillow slips.	2745 Skirts.
160 Pillows made over.	13 Sun-bonnets.
1 Rug.	532 Towels.
9 Shirts.	816 Table-cloths.
1044 Sheets.	10842 Undershirts.
276 Shirts.	1690 Underwaists.
235 Suspenders, pairs.	2032 Vests.
37 Sacks.	3106 Tapes marked and sewed on.
15 Shrouds.	
63 Sun-bonnets.	
1795 Towels.	
135 Table cloths.	
363 Underwaists.	

2.—STATEMENT of fruit and vegetables canned, preserved and pickled, from October 1, 1881, to September 30, 1882.

Canned or Preserved.	Catsup.
41 quarts strawberries.	4 quarts currant.
107 " raspberries, red.	4 barrels currant.
78 " raspberries, black.	
139 " plums.	Pickles.
86 " peaches.	34 gallons peaches.
144 " cherries.	8 " tomatoes.
15 " grapes.	76 " sweet cucumbers.
75 " pears.	1½ barrels cabbage.
9 " spiced currants.	2½ " tomato chowder.
21 " spiced cherries.	
Jellies.	
275 glasses crab apples.	
247 " currants.	

EXHIBIT VI.

INVENTORY of property of the Illinois Northern Hospital for the Insane,
September 30, 1882.

Food	\$7,343 83
Clothing, bedding, etc.....	6,126 41
Laundry supplies.....	554 12
Fuel.....	3,023 80
Illuminating oils and candles.....	63 60
Medicines and medical supplies.....	752 03
Books, stationery, etc.....	1,191 58
Music and amusements.....	3,232 35
Instruments and apparatus	376 40
Household supplies.....	641 15
Furniture, manufactured	9,286 97
" for floors and windows.....	2,112 59
" for beds.....	2,729 97
" glassware, queensware and cutlery.....	1,633 41
" tin, iron and sundries	1,379 40
Lumber, all kinds	1,288 47
Building material, hardware, paints, etc.....	787 90
Iron pipe, fittings, etc. (in store).....	2,506 02
Heating apparatus, water pipes, bath-room fixtures, etc.....	21,434 92
Tools.....	688 10
Machinery and fixtures.....	27,275 05
Farm—Feed in store	3,963 05
Live-stock.....	7,230 50
Vehicles and harness.....	1,664 95
Agricultural implements, garden tools, etc.....	945 10
Hides, tallow, etc.....	451 64
Land	61,075 00
Buildings, all kinds	418,745 00
Total.....	\$588,503 31

LAW OF ADMISSION.

CHAPTER 85, REVISED STATUTES, 1874, PAGE 681, ENTITLED “LUNATICS.”

AN ACT to revise the law in relation to the commitment and detention of lunatics,
[Approved March 24, 1874. In force July 1, 1874.]

PETITION]. § 1. *Be it enacted by the people of the state of Illinois, represented in the general assembly,* That when any person is supposed to be insane or distracted, any near relative, or in case there be none, any respectable person residing in the county, may petition the judge of the county court for proceedings to inquire into such alleged insanity or distraction. For the hearing of such application, and proceedings thereon, the county court shall be considered as always open.

WRIT—SERVICE]. § 2. Upon the filing of such petition, the judge shall order the clerk of the court to issue a writ, directed to the sheriff, or any constable, or the person having the custody or charge of the alleged insane or distracted person, unless he shall be brought before the court without such writ, requiring the alleged insane person to be brought before him at a time and place to be appointed for the hearing of the matter. It shall be the duty of the officer or person to whom the writ is directed, to execute and return the same, and bring the alleged insane person before the court as directed in the writ.

SUBPŒNAS]. § 3. The clerk shall also issue subpoenas for such witnesses as may be desired on behalf of the petitioner, or of the person alleged to be insane, to appear at the time fixed for the trial of the matter.

JURY—TRIAL]. § 4. At the time fixed for the trial, a jury of six persons, one of whom shall be a physician, shall be impaneled to try the case. The case shall be tried in the presence of the person alleged to be insane, who shall have the right to be assisted by counsel, and may challenge jurors as in civil cases. The court may, for good cause, continue the case from time to time.

VERDICT—FORM]. § 5. After hearing the evidence, the jury shall render their verdict in writing, signed by them, which shall embody the substantial facts shown by the evidence, which verdict may be substantially in the following form:

STATE OF ILLINOIS, }
..... County. } ss.

We, the undersigned, jurors in the case of.....(naming the person alleged to be insane), having heard the evidence in the case, are satisfied that said..... is insane, and is a fit person to be sent to a state hospital for the insane; that he is a resident of the state of Illinois, and county of.....; that his age is.....; that his disease is ofduration; that the cause is supposed to be.....(or is unknown); that the disease is (or is not) with him hereditary; that he is not (or is) subject to epilepsy, and that he does (or does not) manifest homicidal or suicidal tendencies. (If the person be a pauper, the fact shall also be announced in the verdict).

VERDICT RECORDED—ORDER OF COMMITTAL—APPLICATION]. § 6. Upon the return of the verdict, the same shall be recorded at large by the clerk, and if it appears that the person is insane, and is a fit person to be sent to a state hospital for the insane, the court shall enter an order that the insane person be committed to a state hospital for the insane, and thereupon it shall be the duty of the clerk of the court to make application to the superintendent of some one of the state hospitals for the insane, for the admission of such insane person.

TO WHICH HOSPITAL—APPLICATION, ETC.] § 7. If such insane person is a pauper, the application shall be first made to the nearest hospital, but if he be not a pauper, application shall be made to such one of the state hospitals for the insane as the relatives or friends of the patient shall desire. In any case, if, on account of the crowded condition of any one of the hospitals, or for other good reason, the patient cannot be received therein, or it is not desirable to commit him thereto, he may be committed to any other of said hospitals. Upon receiving any such application, the superintendent shall immediately inform the clerk whether the patient can be received, and if so, at what time; and if not, shall state the reason why.

WARRANT TO COMMIT]. § 8. Upon receiving notice at what time the patient will be received, the clerk shall, in due season for the conveyance of the person to the hospital by the appointed time, issue a warrant, directed to the sheriff or any other suitable person, preferring some relative of the insane person when desired, commanding him to arrest such insane person and convey him to the hospital; and if the clerk is satisfied that it is necessary, he may authorize an assistant to be employed.

FORM OF WARRANT]. § 9. The warrant may be substantially as follows:

STATE OF ILLINOIS, } ss.
County. }
The People of the State of Illinois to.....
 You are hereby commanded forthwith to arrest....., who has been declared to be insane, and convey him to the Northern (or as the case may be) Illinois Hospital for the Insane (and you are hereby authorized to take to your aid an assistant, if deemed necessary), and of this warrant make due return to this office after its execution.
 Witness my hand and the seal of the county court of..... county, this day of, A. D.
 [L. S.] Clerk of the County Court.....County.

INDORSEMENT—RETURN]. § 10. Upon receiving the patient, the superintendent shall indorse upon said warrant a receipt, as follows:

Northern (or as the case may be) Illinois Hospital for the Insane.
 Received this day of, A. D., the patient named in the within warrant.
 Superintendent.

This warrant, with a receipt thereon, shall be returned to the clerk, to be filed by him with the other papers relating to the case.

WHO NOT ADMITTED—IDIOTS DISCHARGED]. § 11. No person having any contagious or infectious disease, and no idiot, shall be admitted to either of the state hospitals. When the trustees and superintendent shall find that an idiot has been received into the hospital, they may discharge him.

TEMPORARY COMMITMENT]. § 12. If the court shall deem it necessary, pending proceedings and previous to verdict, or after verdict and pending admission to the hospital, temporarily to restrain of his liberty the person alleged to be insane, then the court shall make such order in that behalf as the case may require, and the same being entered of record, a copy thereof, certified by the clerk, shall authorize such person to be temporarily detained by the sheriff, jailor, or other suitable person to whom the same shall be directed.

COSTS]. § 13. When a person not a pauper is alleged to be insane, and is found by the jury not to be insane, the costs of the proceedings, including the fees of the jury, shall be paid by the petitioner, and judgment may be awarded against him therefor. If such person is found to be insane, such costs shall be paid by his guardian, conservator or relatives, as the court may direct. If the person alleged to be insane is a pauper, the costs of the proceeding, including the fees of the jury, shall be paid out of the county treasury: *Provided*, If such pauper is found not to be insane, the court may, in its discretion, award the costs against the petitioner.

WHO TO PAY EXPENSES—SHERIFF'S FEES]. § 14. The expense of conveying a pauper to the hospital shall be paid by the county in which he resides, and that of any other patient by his guardian, conservator or relatives; and in no case shall any such expense be paid by the state, or out of any funds for the insane. The fees of the sheriff for conveying any person to a hospital shall be the same as for conveying convicts to the penitentiary.

BOND TO FURNISH CLOTHING]. § 15. If the person be not a pauper, then one or more persons, relatives or friends of the patient shall, upon his admission into the hospital, become responsible to the trustees for finding the patient in clothes, and removing him when required; and shall execute a bond conditioned as follows, viz:

Know all men by these presents, that we.....and.....of the county of.....and state of Illinois, are held and firmly bound unto the trustees of the Northern (or as the case may be) Illinois Hospital for the Insane in the sum of one hundred dollars (\$100), for the payment of which we jointly and severally bind ourselves firmly by these presents.

The condition of this obligation is, that whereas.....insane person, of the county and state aforesaid, has been admitted as a patient into said hospital for the insane; now, therefore, if we shall find said patient in suitable and sufficient clothing whilst....may remain in said institution, and shall promptly pay for such articles of clothing as it may be necessary to procure for said.....at the hospital, and shall remove.....from said hospital when required by the trustees to do so, then this obligation to be void; otherwise to remain in full force.

Witness our hands and seals, this.....day of.....A. D.....

..... SEAL
..... SEAL

CLOTHING]. § 16. The clothing to be furnished each patient, upon being sent to the hospital, shall not be less than the following: For a male, three new shirts, a new and substantial coat, vest, and two pairs of pantaloons of woolen cloth, three pairs of woolen socks, a black or dark stock or cravat, a good hat or cap, and a pair of new shoes or boots, and a pair of slippers to wear within doors. For a female, in addition to the same quantity of undergarments, shoes and stockings, there shall be two woolen petticoats or skirts, three good dresses, a cloak or shawl, and a decent bonnet. Unless such clothing be delivered, in good order, to the superintendent, he shall not be bound to receive the patient.

PAUPERS—COUNTY TO FURNISH CLOTHING, ETC.] § 17. If the insane person be a pauper, it shall be the duty of the judge of the county court to see that he is furnished with the necessary amount of sub-

stantial clothing at the time he is sent to the hospital, and from time to time while he remains a patient in the hospital, and that he be removed therefrom when required by the trustees; the expense of such clothing and removal shall be paid out of the county treasury, upon the certificate of the judge of the county court.

DISCHARGE OF PATIENT—NOTICE—REMOVAL]. § 18. Whenever the trustees shall order any patient discharged, the superintendent shall at once notify the clerk of the county court of the proper county thereof, if the patient is a pauper, and if not, shall notify all the persons who signed the bond required in section 15 of this act, and request the removal of the patient. If such patient be not removed within thirty days after such notice is received, then the superintendent may return him to the place from whence he came, and the reasonable expenses thereof may be recovered by suit on the bond, or in case of a pauper, shall be paid by the proper county.

NON-RESIDENT PATIENTS]. § 19. Whenever application shall be made for a patient not residing within the state, if the superintendent shall be of opinion that from the character of the case it is probably curable, and if there be at the time any room in the hospital, the trustees, in their discretion, may order the patient to be admitted, always taking a satisfactory bond for the maintenance of the patient, and for his removal when required. The rate of maintenance in such cases shall be fixed by the trustees, and two months' pay in advance shall be required. But no such patient shall be detained without the order of a court of competent jurisdiction, or a verdict of a jury.

RESTORATION TO REASON—DISCHARGE]. § 20. When any patient shall be restored to reason, he shall have the right to leave the hospital at any time, and if detained therein contrary to his wishes after such restoration, shall have the privilege of a writ of *habeas corpus* at all times, either on his own application, or that of any other person in his behalf. If the patient is discharged on such writ, and if it shall appear that the superintendent has acted in bad faith, or negligently, the superintendent shall pay all the cost of the proceeding. Such superintendent shall moreover be liable to a civil action for false imprisonment.

COUNTY HOSPITAL]. § 21. This act shall not be construed to prevent the committing of any insane pauper to the hospital for the insane of the county in which he may reside, where such a hospital is provided.

TRIAL BY JURY NECESSARY]. § 22. No superintendent or other officer or person connected with either of the state hospitals for the insane, or with any hospital or asylum for insane or distracted persons in this state, shall receive, detain or keep in custody, at such hospital or asylum, any person who shall not have been declared insane by the verdict of a jury, and authorized to be confined by the order of a court of competent jurisdiction; and no trial shall be had of the question of the sanity or insanity of any person before any judge or court, without the presence of the person alleged to be insane.

PENALTY.] § 23. If any superintendent, or other officer or person connected with either of the state hospitals for the insane, or with any hospital or asylum for insane or distracted persons, in this state, whether public or private, shall receive or detain any person who has not been declared insane by the verdict of a jury, and whose confinement is not authorized by the order of a court of competent jurisdiction, he shall be confined in the county jail not exceeding one year, or fined not exceeding \$500, or both, and be liable civilly to the person injured, for all the damages which he may have sustained; and if he be connected with either of the insane hospitals of this state, he shall be discharged from service therein.